SOCIAL NORMS, SOCIAL SELF-EFFICACY AND PERCEIVED
SOCIAL STATUS IN THE EXPRESSION OF SOCIAL ANXIETY:
A CROSS-NATIONAL COMPARISON

by

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Abstract

Previous research has consistently shown that Asian-heritage individuals report higher levels of social anxiety compared to their European-heritage counterparts. The goal of this study was to examine whether culturally-influenced social standards, social self-efficacy, and perceived social status account for elevated reports of social anxiety in East Asian-heritage (EAH) individuals. Drawing from cognitive and evolutionary models of social anxiety, two competing hypotheses that encompassed these social contextual variables were tested to explain ethnic differences in social anxiety: the *Asian socialization hypothesis* proposed that higher self-reported social anxiety in EAH individuals are related to their greater exposure to East Asian cultural values, while the *cultural discrepancy hypothesis* posited that Asian-Western differences in social anxiety are associated with the bicultural experience of cultural and/or ethnic discrepancy with mainstream Western culture.

In a cross-national sample of East Asian- and European-heritage students living in Canada (Ns = 280 and 103, respectively) and East Asian students living in Korea and China (N = 309), participants completed self-report questionnaires that measured social anxiety, depression, and social contextual factors (i.e., cultural norms, social self-efficacy, and perceived social status). Measures of acculturation and self-construal were also included to confirm that the groups differed on cultural values. Planned contrast analyses demonstrated relatively strong support for the *cultural discrepancy hypothesis*, in which bicultural East Asian groups (i.e., 1st- and 2nd-generation EAH individuals) reported greater social anxiety and depression, as well as lower initiation social self-efficacy and perceived social status compared to members of unicultural groups (i.e., European-heritage and overseas East Asian groups). However, social self-efficacy and perceived social status did not appear to mediate the elevated social anxiety

levels in bicultural East Asians. Findings showed limited support for the *Asian socialization hypothesis.*

Overall, the results suggest that higher reports of social anxiety in bicultural East Asians may be associated with the experience of cultural and ethnic discrepancy with Western mainstream culture, and conceptualized as a part of the experience of acculturative and/or bicultural stress. Findings from this study suggest that the role of cultural discrepancy in elevated social anxiety warrants further investigation using longitudinal or experimental designs.

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Social Norms, Social Self-Efficacy, and Perceived Social Status in the

Expression of Social Anxiety: A Cross-National Comparison

Social anxiety is a relatively common experience, with a majority of people expressing

discomfort with the prospect or presence of being negatively evaluated or judged by others in

social situations (Stein, Walker, & Forde, 1994). While the vast majority of contemporary

research on social anxiety has been based on Western populations, increasing interest has been

directed toward examining social anxiety from a cross-cultural perspective. In particular, ethnic

minority mental health research has identified differences in the reporting of social anxiety

among individuals of Asian and European heritage. Studies conducted in North America have

consistently shown that Asians score higher than their European-heritage counterparts on

Western-based self-report measures of social anxiety (Hong & Woody, 2007; Hsu & Alden,

2007; Okazaki, 1997, 2002; Sue, Sue, & Ino, 2001).

Despite accumulating evidence citing ethnic differences in social anxiety, relatively little

research has examined how culture-related factors might influence the processes underlying

higher reports of social anxiety in Asian-heritage populations in North America. Shedding light

on the nature of underlying processes in cultural differences involves *unpackaging culture*, that

is, revealing specific cultural experiences or variables that explain differences both within and

across cultures (Heine, Lehman, Peng, & Greenholtz, 2002). To date, cultural writers have

posited that ethnic differences in social anxiety may arise from differences in cultural values, and

hence, the way individuals construe their sense of self (Chen, 1995; Okazaki, 1997). Indeed,

Marsella (1984) has argued that the concept of the self is the mechanism by which culture

influences the expression of mental disorder. While Western cultures emphasize individualistic

values of autonomy and achievement that promote an independent self-construal, East Asian

cultures adhere to more collectivistic standards that foster a sense of interdependence with others

(e.g., Markus & Kitayama, 1991). Research has begun to empirically investigate explanations for

ethnic differences in social anxiety, with studies highlighting the mediating roles of self-

construal and identity consistency (Hong & Woody, 2007), as well as interpersonal attunement

concerns (Lau, Fung, Wang, & Kang, 2009). While research and speculation regarding ethnic

differences in social anxiety are starting to move beyond a focus on global culture orientations

and self-construal, there is still much work to be done toward identifying the complex interplay

of culture-related factors that potentially underlie these differences.

      Given that the social context within which feelings of discomfort and apprehension arise

is implicit in the concept of social anxiety, ethnic differences in social anxiety may be informed

by examining cultural influences in social contextual factors. It stands to reason that factors

within a social context affect social goals and behaviours, and hence, the degree of social anxiety

experienced by an individual. In particular, there may be differences in the way culturally-

influenced social contextual factors influence levels of social anxiety between East Asian- and

European-heritage individuals. Established cognitive theories of social anxiety have highlighted

the importance of social standards of behaviour (Clark & Wells, 1995). This may be a relevant

social contextual factor in ethnic differences in social anxiety, given that East Asian and Western

cultures adhere to varying concepts of the self which promote different social goals and

standards for behaviour. Cognitive models of social anxiety also point to the notion of social

self-efficacy, or one's perceived ability to meet the prevailing social standards of behaviour

(Carver & Scheier, 1986). There is reason to suggest that there may be ethnic differences in

social self-efficacy with regard to Western standards of behaviour that may influence the degree

of social anxiety experienced. Another prominent theory of social anxiety is the evolutionary

model, which proposes that social anxiety results from perceptions of relatively lower social status within a social situation (Gilbert, 2001). There may be differences in how members of different cultures perceive their social rank or status relative to others, and this may have implications for the experience of social anxiety.

The current study draws from both cultural theory and existing theories of social anxiety in order to elucidate ethnic differences in social anxiety. The goal of this study was to examine whether the social contextual factors of social standards of behaviour, social self-efficacy, and perceived social status account for ethnic differences in self-reported social anxiety between East Asian-heritage (EAH) and European-heritage (Euro) individuals. Two main rival hypotheses that encompassed these social contextual variables were proposed: the first was the *Asian socialization hypothesis*, which predicted that higher levels of self-reported social anxiety in EAH individuals are associated with greater exposure to East Asian cultural values, and the second was the *cultural discrepancy hypothesis*, which posited that higher reports of social anxiety in EAH individuals are associated with the experience of discrepancy with respect to one's heritage culture and/or ethnic status and the mainstream culture. In this way, the current study attempted to delineate whether ethnic differences in social anxiety reflected cultural differences, or rather the unique experience of bicultural East Asians in North America.

Findings from this study build on the existing literature by distinctively examining the role of social contextual variables in ethnic differences in social anxiety. Furthermore, the current study is the first to directly compare three main populations: European-heritage, East Asian-heritage, and overseas East Asian. The inclusion of an overseas East Asian sample permitted the sociocultural context of the East Asian samples in this study to be accounted for, thus providing a stronger test of the study hypotheses.

Ethnic Differences in Social Anxiety

Cumulative evidence from ethnic minority research conducted in North America suggests that compared to their European-heritage counterparts, Asian-heritage populations report higher levels of social anxiety (e.g., Hong & Woody, 2007; Hsu & Alden, 2007; Lau, Fung, Wang, & Kang, 2009; Norasakkunkit & Kalick, 2002; Okazaki, 1997, 2000, 2002; Sue et al., 2001). The majority of these studies have been conducted on college student samples, although a recent study by Hong & Woody (2007) included a community sample. As well, most of these studies have combined Asian individuals of various generational status (e.g., first- or second-generation), and ethnic groups (e.g., Chinese, Korean, Filipino, etc.). A variety of social anxiety measures have also been employed across studies. Table 1 provides a summary of study characteristics as well as effect sizes for cross-cultural differences in social anxiety.

With respect to the magnitude of cross-cultural differences in social anxiety, studies that combined Asians of varying generational status and ethnicity have shown effect sizes ranging from 0.25 to 0.89. In terms of specific measures of social anxiety employed in the latter studies, those that used the Social Avoidance and Distress scale (SADS) found effect sizes ranging from 0.68 to 0.89, those that employed the Fear of Negative Evaluation (FNE) scale found effect sizes of approximately 0.30, and the majority of those using the Social Phobia and Anxiety Inventory (SPAI) demonstrated effect sizes ranging from 0.55 to 0.77. An exception to this is the study by Lee et al. study which found an effect size of 0.18 using the SPAI. Studies in which the European-heritage sample was compared to second-generation Chinese individuals generally found effect sizes of 0.42 to 0.67 using the FNE and SADS (Sue, Ino, & Sue, 1983; Sue et al., 2001), but lower effect sizes of 0.09 and 0.06 on the Social Interaction Anxiety Scale (SIAS) and the Social Phobia Scale (SPS), respectively (Hsu & Alden, 2008). Two studies that compared

either first-generation Chinese or Korean individuals with European-heritage individuals found

effect sizes ranging from 0.45 to 0.97 using a variety of social anxiety measures, including the

SADS, SPAI, and SPS (Hong & Woody, 2007; Hsu & Alden, 2008).

From the above data, it appears that the magnitude of Asian-Western differences in social

anxiety tends to be moderate to large across a variety of measures. In particular, the SADS and

SPAI seem to reliably demonstrate moderate to high effect sizes across various Asian

comparison samples. However, delineation of whether there are moderating effects for specific

sample characteristics remains a challenge due to the tendency for most studies to combine Asian

individuals of varying generational status and ethnicity. The few studies that do not combine

generational status or ethnic groups tend to indicate that a moderate to large effect size holds for

first-generation Asians, as well as across specific East Asian ethnic groups (i.e., Chinese and

Korean). However, it is not clear whether the moderate to large effect size also holds for second-

generation Asians given the inconsistent findings among studies that employed second-

generation Asians as the comparison group.

Differences between East Asian and Western Cultural Values

Prior to examining how culture-related social contextual factors might influence the

higher reports of social anxiety in East Asian-heritage populations, a brief discussion of

differences in cultural values between East Asian and Western cultures seems pertinent. The

most common way of describing cultural variability between East Asian and Western cultures is

based on the dimension of individualism-collectivism. Hofstede (1980) defined individualism as

an emphasis on personal rights above obligations, a concern for oneself and immediate family,

and a focus on autonomy, self-fulfilment, and personal achievement. Collectivism, on the other

hand, assumes that group membership is central with expectations based on ascribed social roles,

and that individuals are mutually obligated to one another. The goals of collectivism are reflected in valued personal traits, such as sacrifice for the common good and maintaining harmonious relationships with others (Markus & Kitayama, 1991). Researchers tend to conceptualize individualism as the opposite of collectivism, particularly when comparing Western and East Asian cultural frames (Oyserman, Coon, & Kemmelmeier, 2002), but individualism and collectivism are seen to both exist in all cultures, with one being more salient to guide social behaviors (Gudykunst, 2001). Cultural writers have made the assumption that individualism is more prevalent in industrialized Western societies than in other societies, particularly those that are more traditional in developing countries (Oyserman et al., 2002).

Empirical evidence seems to support the theoretical assumption that individualism predominates in mainstream North American (i.e., Canadian and the U.S.) and Western European cultures, while collectivism tends to predominate in East Asian (i.e., Chinese, Japanese, Korean) cultures. Hofstede (1980) carried out a cross-national study of 39 countries and assessed country-level indicators of individualism based on responses regarding work place goals and values. He assigned each country an Individualism Index (IDV) and found that the U.S. and Canada were among the highest on the index, with Western European countries not falling far behind. Southern European and East Asian countries showed the lowest levels of individualism. A meta-analysis of individualism and collectivism studies conducted by Oyserman et al. (2002) similarly found greater individualism in North America (i.e., U.S. and Canada) compared to East Asian countries, with an average moderate effect size of 0.42. In addition, regional analyses showed small differences between North Americans and Western Europeans. Interestingly, European Americans were not less collectivistic compared to Japanese and Koreans, but Chinese showed robust differences in lower individualism and higher

collectivism compared to European Americans. Within the U.S., European Americans were higher on individualism and lower on collectivism in comparison to Asian Americans.

A commonly researched psychological domain related to individualism-collectivism is the idea of self-concept, or how individuals view themselves or their sense of identity. Self-construal has been described as a combination of thoughts, feelings, and behaviours concerning one's relationship to others, and the self as separate from others (Singelis, 1994). Markus & Kitayama (1991) have referred to *independent* versus *interdependent* self-construals to describe the self-related aspects of individualism and collectivism, respectively. Those from individualistic cultures, such as North American culture, tend to define the self through unique traits rather than social roles, and thus construe their sense of selves independently. Hence, an independent self-construal emphasizes internal abilities, thoughts, and feelings, unique expression of the self, a focus on internal attributes and promotion of one's own goals, and being direct in communication (Singelis, 1994).

On the other hand, members of collectivistic cultures, such as East Asian cultures, tend to view themselves as interconnected with others in their ingroups, such as members of the family, and the self-concept is conceived in terms of group membership and the position of the group within society (Hofstede, 1980). An interdependent construal of the self tends to emphasize relationships, ascribed social roles, and hierarchy, group belonging and harmonious interpersonal relationships, flexibility to adjust to varying social contexts, and indirect communication. It has been proposed that these types of self-construal can co-exist in individuals of all cultures, but that the salience of a particular aspect of the self depends on cultural norms and other contextual stimuli (Triandis, 1989). According to this conceptualization, the everyday cultural stimuli or cues in North American individualistic societies will render independent self-construals to be

more salient, whereas the cultural context of East Asian collectivist societies will lead

interdependent self-construals to predominate (Kemmelmeier & Cheng, 2004). An extensive

array of studies supporting the cross-cultural variability in the self concept has been reviewed

(Markus & Kitayama, 1991; Oyserman et al., 2002; Singelis, 1994).

<div align="center">*Social Standards and Social Anxiety*</div>

Cultural Values and Social Standards

The notion of social standards has been increasingly considered in the etiology of social

anxiety. According to recent cognitive models of social anxiety, individuals develop a series of

assumptions, one of which includes excessively high standards for social performance (Clark &

Wells, 1995; Rapee & Heimberg, 1997). For example, individuals with social anxiety often

believe that they have to be especially interesting or witty to be successful in a social interaction.

These cognitive models contend that having such high social standards leads individuals to

perceive relevant social situations as threatening. As a result, these individuals will experience

physical and cognitive symptoms of anxiety, and engage in behaviours, such as avoidance, that

contribute to the maintenance of the anxiety.

A potential limitation with respect to these models of social anxiety is that the 'social

standards' they refer to are based on Western values and norms. Social standards comprise a set

of criteria or rules that are established by past interpersonal experiences, knowledge of self and

others, and current social contexts (Higgins, 1990). Furthermore, social standards or norms are

believed to have great significance in determining social and interpersonal behaviours within a

culture (Lindskold & Bennett, 1981; Triandis, 1989). Given that social standards are largely

influenced by cultural context, it is reasonable to question whether all forms of social standards

lead to the proposed cycle of social anxiety, or whether these models of social anxiety only apply

in the case of Western social standards or norms.

Differences in social values and goals that may impact social behaviour have been described between East Asian and Western cultures. Based on values of individualism, Western societies tend to emphasize autonomy, uniqueness, and a sense of competitiveness (Markus & Kitayama, 1991). These values reasonably translate into social standards of behaviour that require individuals to be assertive, competitive, and to not show signs of weakness (e.g., Clark, 2001). In contrast to Western cultures, East Asian cultures are characterized by filial piety, a family-oriented value system, and collectivism, or a sense of interdependence with others. In particular, East Asian cultures emphasize the importance of maintaining group harmony and reducing conflict in interpersonal interactions. These values are reflected in East Asian standards for social behaviours, such as greater attunement to social cues and judgments of others (i.e., greater social sensitivity), as well as being reticent and emotionally restrained (e.g., Okazaki, 1997). Furthermore, social values of East Asian cultures have been regarded as emphasizing subservience, conformity, humility, and deference to authority (Hamid, 1994), and normative expectations of cooperation have been found to be positively associated with adherence to collectivistic values in East Asians (Chiu, 2001).

While it appears that there are considerable differences in the values endorsed by East Asian and Western cultures, it is particularly notable that such behaviours valued in East Asian cultures appear to be reminiscent of Western-conceptualized social anxiety. For example, it has been suggested that individuals with social anxiety in Western cultures often display reticent and submissive behaviours in an attempt to prevent the revealing of any negative self-characteristics, and thus protect themselves from social rejection (Clark & Wells, 1995). Thus, the motivation

behind, or meaning ascribed to such behaviours may differ across East Asian and Western cultures.

Few studies have empirically examined cross-cultural differences in perceived social standards or norms for behaviour. A cross-national study by Heinrichs et al. (2006) investigated the association between culture and social behavioural norms, as well as whether social behavioural norms were related to levels of social anxiety. Participants were university students from eight different countries that were classified as either collectivistic or individualistic, including North American countries such as Canada and the US, and Asian countries such as Japan and Korea. Participants responded to various vignettes depicting social behaviours that were either 'socially assertive, attention-seeking social behaviours' or 'socially withdrawn, attention-avoiding social behaviours', and evaluated the social appropriateness of the behaviours based on both personal and cultural norms. Participants also completed Western-constructed measures of social anxiety and fear of blushing. While cultural groups did not differ in their personal norms with respect to the social appropriateness of attention-seeking or attention-avoiding social behaviours, collectivistic countries were significantly more accepting toward socially reticent and withdrawn behaviours compared to individualistic countries. Individuals from collectivistic countries also reported significantly more social anxiety and fear of blushing than those from individualistic countries. Further, both personal and cultural norms were significantly correlated with social anxiety and fear of blushing, indicating that individuals who were more personally accepting of, and perceived their culture to be more accepting of attention-avoiding behaviours, reported higher levels of social anxiety and fear of blushing.

While the study is notable in its cross-national nature, the various nationalities were grouped into broad collectivistic versus individualistic country categories, and the separate

effects of cultures within these broad groups (e.g., East Asian) are not clear. Nonetheless, this study provides initial support for differences in social standards or norms between East Asian and Western cultures, and the notion that East Asian collectivistic cultures tend to regard attention-avoiding social behaviours as more appropriate or acceptable compared to Western cultures. Further, the finding that cultural acceptability of such attention-avoiding behaviours is associated with higher social anxiety lends support to the notion that these types of social behaviours are related to the Western construct of social anxiety.

Cultural Differences in Social Behaviours

Although the cross-cultural research is scarce with respect to perceived standards of social behaviour, there are empirical studies showing support for differences between East Asians and Westerners with respect to the display of verbal and nonverbal social behaviours. To place this within a theoretical framework, Hall (1976) suggested that members of collectivistic cultures tend to use high-context communication, which is characterized by being indirect, ambiguous, and understated, while those from individualistic cultures tend to use low-context communication, which involves being direct, open, precise, and consistent with one's own feelings. Such patterns of communication are compatible with collectivistic values that promote group harmony over the needs of the individual, and individualistic values that emphasize the individual's goals, respectively. In high-context communication, very little information is explicitly transmitted in the message, and most information is either in the physical context or internalized in the listener. Thus, high-context communication requires listeners to be able to interpret indirect messages in specific contexts, as well as to capture nonverbal aspects of communication (Gudykunst, 2001). By contrast, most information in low-context communication is clearly embedded in the messages transmitted.

With respect to cross-cultural variations in verbal social behaviours, the most clearly delineated construct that has been examined is assertiveness. Assertiveness involves self-expression and concern with personal rights, without dominating others (Bresnahan, Shearman, Lee, Ohashi, & Mosher, 2002; Thompson & Klopf, 1991), and appears to be a manifestation of low-context communication. In Western cultures where the emphasis is placed on individual achievement and needs, assertive behaviour is considered efficacious and competent (Bresnahan et al., 2002). On the other hand, competent behaviour in East Asian cultures is demonstrated through face maintenance and the preservation of interpersonal harmony (Bond, 1996); thus, it is expected that assertive behaviours requiring open expression of opinions and needs would be discouraged in East Asian cultures. As such, East Asian cultural values would be manifested in the use of high-context communication that is indirect and unexpressive. Consistent with these ideas, numerous studies have demonstrated that compared to individuals of European heritage, East Asians score lower on self-report measures of assertiveness (Bresnahan et al., 2002; Fukuyama & Greenfield, 1983; Zane, Sue, Hu, & Kwon, 1991).

Differences between East Asian and European-heritage individuals in assertiveness appear to be situational-specific, with differences tending to occur in the context of interacting with strangers (Zane et al., 1991). Interestingly, two studies that employed behavioural measures to examine level of assertiveness via role-playing did not find any differences between Chinese and European-heritage individuals (Sue et al., 1983; Sue et al., 2001). Consistent with the notion of situational specificity, it is possible that East Asians display similar levels of assertiveness to European-heritage individuals in certain situations (i.e., role-playing), but inhibit these responses in other situations, such as real-life interactions with strangers.

Research has also described variations between East Asian and Western cultures with

respect to levels of verbal expression. In East Asian cultures, the emphasis on interdependence is related to being sensitive to others' feelings and concern with avoiding negative evaluations (Kim, Sharkey, & Singelis, 1994), which is consistent with the collectivistic focus on high-context communication. As a result, verbal communication in East Asian cultures requires lower levels of verbal interaction, moderation of emotional expression, and greater sensitivity of listeners (Gao, Ting-Toomey, & Gudykunst, 1996; Gudykunst, 2001). By contrast, the Western emphasis on independence is positively associated with concern for clear communication through the use of greater levels of verbal interaction, expressing affect, and personal disclosure (Costigan, Bardina, Cauce, Kim, & Latendresse, 2006; Kim et al., 1994). Thus, while low verbal expression, or reticence, may be associated with passivity in Western cultures, it is considered to be an active behaviour in East Asian cultures (Gudykunst, 2001). The general notion of greater reticence or reserve among East Asians is reflected in a number of empirical studies. Compared to individuals of European heritage, East Asians have been shown to score higher on self-report questionnaires measuring reticent behaviours (Chen, 1995; Gratch, Bassett, & Attra, 1995), shyness (Paulhus, Duncan, & Yik, 2002), emotional restraint (Kao, Nagata, & Peterson, 1997), and introversion (McCrae, Costa, & Yik, 1996).

While the cultural literature has long considered the important role of cultural factors in various nonverbal social behaviours (e.g., Argyle & Cook, 1976), empirical data investigating Asian-Western differences in such behaviours is scant. Cultural writers have described variations in the interpretation of eye contact in social interactions (Knapp & Hall, 2002). In Western cultures, maintaining eye contact is perceived as being knowledgeable or confident, while in East Asian cultures, these behaviours are considered to be disrespectful, rude, and even deceitful (e.g., Marsella, 1993; McCarthy, Lee, Itakura, & Muir, 2006). A study investigating cross-cultural

differences in eye gaze found that Japanese participants were more likely than individuals of European heritage to avert their gaze downward when responding to questions requiring thought (McCarthy et al., 2006). In another study examining responses to embarrassment, Edelmann and Iwawaki (1987) found that compared to Japanese students, students from the United Kingdom were more likely to report that gaze aversion was a response to embarrassment, suggesting that there may be differences in the interpretation of gaze avoidant behaviour.

Another nonverbal behaviour that may demonstrate cross-cultural differences is the use and tolerance of silence, or pauses, in conversation. Based on East Asian traditional values, the appropriate use of silence and pauses is viewed positively and considered to be as important as verbal communication (Marsella, 1993). It has been noted that in Japanese culture, individuals often need to first become familiar with their conversational partners, and are not hesitant about allowing long silences to develop and leaving much unspoken (Morsbach, 1973). This is consistent with the notion of high-context communication which involves allowing listeners to make inferences based on knowledge of the situation rather than explicit verbal information (Gudykunst, 2001). In contrast, because those of Western background tend to use low-context communication, which involves coming to the point relatively quickly in a conversation, they experience a general discomfort with silence because it interrupts the flow of conversation (Morsbach, 1973); hence, those from Western backgrounds are more likely to believe that pauses in conversation should be filled (Gudykunst, 2001).

Empirical findings from cross-cultural studies with respect to beliefs about, and the use of, silence so far appear mixed. Wiemann, Chen, and Giles (1986) (as cited by Gudykunst, 2001) found that native Chinese individuals had a greater tolerance for silence compared to either European Americans or Chinese Americans. On the other hand, Hasegawa and Gudykunst

(1998) found that Asian Americans viewed silence more negatively when communicating with strangers compared to European Americans. However, there were no differences across groups in views of using silence with close friends. Feldstein, Hennessy, and Bond (1981) (as cited by Welkowitz, Bond, & Feldstein, 1984) examined differences in the use of silence and found that Chinese Canadians used longer periods of silence during conversation, regardless of whether they were speaking Chinese or English, compared to English-speaking Canadians.

Thus, the above described social behaviours of lower assertiveness, reticence, eye gaze avoidance, and tolerance of silence appear to be compatible with the East Asian cultural goal of interpersonal attunement and maintaining harmonious relations with others. While these behaviours appear to be discrepant with Western social standards, and might even be considered maladaptive in Western cultures, they appear to be highly adaptive social and communicative strategies for those from East Asian cultures. Research has shown that low levels of assertiveness and reticence are positively associated with social anxiety and social phobia in Western samples (Beidel & Turner, 1999; LeSure-Lester, 2001; Spence, Donovan, & Brechman-Toussaint, 1999). In addition, studies assessing social skill-related behaviours among Westerners have found that eye gaze aversion (Baker & Edelmann, 2002; Daly, 1978) and a tendency for silence (Arkowitz, Lichtenstein, McGovern, & Hines, 1975) are significantly associated with social anxiety and social phobia. Given that these social behaviours are related to many of the behaviours described in Western individuals who are socially anxious, it is reasonable to suggest that the standards of social behaviour in East Asian cultures overlap with the Western construct of social anxiety. Thus, Asian-heritage individuals may be reporting higher levels of social anxiety because the behaviours associated with Western social anxiety are more normative in East Asian cultures. If this is the case, then the cognitive model would appear to be incompatible with East Asian

cultures given that the high standards of behaviour that are thought to lead to social anxiety would be, in East Asian cultures, related to Western social anxiety itself.

Appraisals of Social Anxiety

The above hypothesis that the social standards of behaviour endorsed by East Asian cultures are associated with the Western concept of social anxiety raises questions as to whether the higher reports of social anxiety in Asians are simply an artifact of construct overlap between East Asian social standards of behaviour and the Western construct of social anxiety (wherein the meaning, motivation behind, or experience of Western social anxiety-related behaviours is actually different from East Asian standards of behaviour), or whether East Asians are actually endorsing higher levels of the same cognitive and emotional experience of social anxiety as described in Western individuals (i.e., true distress). These queries might be addressed by considering another important assumption in cognitive models of social anxiety--the assumption that the anxiety-related symptoms or behaviours resulting from the perception of social situations as dangerous are necessarily *distressing* to the individual (Clark & Wells, 1995). This assumption does not take into account the possibility that culturally-influenced values and social standards may also affect *appraisals* of social anxiety symptoms and associated behaviours, and hence, the level of distress one experiences due to having these symptoms.

According to existing theories of social norms (e.g., Cialdini & Trost, 1998; Deutsch & Gerard, 1955), the meaning or impact of a social behaviour depends on the norm of the behaviour or the extent to which the behaviour is carried out within a social or cultural context. As pointed out earlier, given that behaviours related to Western social anxiety, such as unassertiveness, reticence, and social restraint may be more normative in East Asian cultures because they serve collectivistic goals of maintaining group harmony (Chen, 2000), such

behaviours may be less likely to be appraised as maladaptive in East Asian cultures. Thus, it is possible that East Asians experience less of the distress that is typically accompanied (in Western cultures) with endorsement of Western-based symptoms of social anxiety. If this is the case, then it is likely that the higher reports of social anxiety in Asians are linked to construct overlap between East Asian social standards of behaviour and Western social anxiety, and do not reflect an experience of higher levels of distress and functional impairment that typically define social phobia in Western individuals.

Few empirical studies have directly examined the effect of culture-related values on individuals' own appraisals of social anxiety and related behaviours. Rather, extant studies have measured other-ratings of social acceptability, and maladjustment or impairment associated with social anxiety. Cross-national comparisons of children in China and North America have found that shy-anxious children in China are more accepted by peers, teachers, and parents, compared to shy-anxious children in North America, who are more likely to experience peer rejection (Chen, Rubin, & Sun, 1992). Furthermore, shy-anxious Chinese children do not display the social and psychological impairment that shy North American children experience, given that they perceive themselves to be more competent, and report less loneliness and depression compared to their North American counterparts (Chen, Rubin, & Li, 1995). On the other hand, studies examining Asian and Western adult populations *within* North America have not found differences in acceptability of social anxiety (Okazaki & Kallivaylil, 2002) or degree of impairment associated with social anxiety (Hsu & Alden, 2007), suggesting that Asians in North America do not appraise social anxiety less negatively compared to individuals of European heritage.

The inconsistent findings for Asians residing in Asia versus North America may reflect

the notion that appraisals of social anxiety differ according to prevailing sociocultural standards or norms. Indeed, research in China has shown that as social and economic changes over time have corresponded to the gradual acceptance of Western ideals and values, behaviours related to social anxiety have become less positively associated with social and academic achievement, and have become associated with peer rejection and depression (Chen, Cen, Li, & He, 2005). It is also reasonable to question whether appraisals of social anxiety are affected by a particular social or cultural context within North America, given the diversity of ethnic minority groups and social settings within North America. Thus, the extant research suggests that within North America, Asians may appraise symptoms of social anxiety as less distressing when in the specific context of Asian cultural norms, compared to Western cultural norms, and that Asians and Westerners would not differ in their appraisals of social anxiety in the context of Western cultural norms. Thus, examining appraisals of social anxiety-related symptoms and behaviours in differing cultural contexts will help to clarify the influence of cultural context in the meaning or impact of social anxiety in Asians within North America, as well as to elucidate the emotional experience associated with the higher reports of social anxiety in Asians.

<div align="center">Social Self-Efficacy and Social Anxiety</div>

Another social contextual factor that may explain the higher reports of social anxiety in Asian-heritage individuals relates to one's perceived ability to meet social standards of behaviour. As discussed earlier, a central feature in cognitive models of social anxiety is that individuals who are socially anxious often set extremely high standards for their social performance. In addition to this, individuals with social anxiety tend to perceive themselves as not being able to meet the expected standards of social behaviour. Thus, there is a discrepancy between salient social standards and the perceived ability to meet such standards (e.g., Carver &

Scheier, 1986; Clark & Wells, 1995; Schlenker & Leary, 1982). Cognitive theorists postulate

that this perceived inability to meet social standards leads to symptoms of social anxiety, as well

as withdrawal and avoidance behaviours to minimize social disapproval (e.g., Carver & Scheier,

1986). This conceptualization is consistent with the more general self-discrepancy theory posited

by Higgins (1987) in which discrepancies between the actual self-state and ought self-state (i.e.,

represented by an individual's or others' beliefs about the individual's duties, responsibilities, or

obligations) is associated with feelings of anxiety. To date, these theories related to self-

discrepancy do not take into account self-discrepancy in a culture-related context.

Several empirical studies have found support for the notion that social anxiety is

associated with a discrepancy between social standards and perceived social ability. One's

perceived ability to meet expected standards of a social situation is referred to as *social self-

efficacy.* Bieling and Alden (1997) found that individuals with social phobia had higher levels of

socially prescribed perfectionism compared to controls, and that social phobia was associated

with lowered perceived ability to meet others' social standards. Other studies examined socially

anxious and non-anxious individuals who made ratings on various expected standards (i.e.,

personal and others' standards) as well as their perceived ability to meet these standards in an

upcoming interaction. Findings showed that social anxiety was positively associated with

perceived inability to meet others' standards, and that this relationship did not hold for personal

standards (Wallace & Alden, 1991, 1995). Thus, there appears to be evidence to suggest that

Western individuals with social anxiety tend to experience a discrepancy between what they

perceive others expect from their social behaviors and what they feel they are capable of

accomplishing (i.e., lower social self-efficacy).

Given the role that discrepancy between social standards and one's perceived social

ability plays in social anxiety, it would be important to question whether experiencing differing or conflicting cultural standards may influence this discrepancy, and thus the experience of social anxiety. Specifically, East Asians have been socialized to behave in ways that reflect East Asian collectivistic values; for example, as discussed previously, East Asians tend to display more behaviours related to lower assertiveness and reticence. These behaviours appear to be in direct conflict with valued behaviours in Western society, such as assertiveness, competitiveness, and direct expression of one's thoughts and feelings. Particularly in the case of East Asian immigrants in which these standards of behaviour have been made more salient in their native countries, it is possible that East Asians in a Western context may experience a degree of conflict or dissonance between the social behaviours they have been socialized to engage in, and the standards of behaviour of the prevailing Western norms. Even East Asians who have been raised in a Western society may face the challenge of having to meet the standards and norms of two cultural norms (David, Okazaki, & Saw, 2009). Thus, East Asians in a Western context may tend to experience a greater discrepancy between expected standards of behaviour and their perceived ability to meet these standards (i.e., lower social self-efficacy for Western-defined norms) compared to those of European heritage who have been socialized with respect to the standards of the Western norm. As a result, East Asians in North American settings may experience greater levels of social anxiety compared to European-heritage individuals.

The notion of conflict between East Asian cultural standards and mainstream Western norms has been discussed in the cultural literature in the context of acculturative and bicultural stress. The concept of *acculturative stress* has been described as the range of physical, social, and psychological effects experienced by minority groups as a result of the acculturation process (Berry, Kim, Minde, & Mok, 1987). In particular, difficulties arise from exposure to majority

cultural values that are in conflict with one's native cultural values (Greenland & Brown, 2005).

In the literature, acculturative stress tends to apply to the experience of immigrants to a Western country who are adjusting to a new host society. A number of psychological correlates of acculturative stress have been described such as anxiety, depression, identity confusion, low self-esteem, and psychosomatic symptoms (Zheng & Berry, 1991).

Research to date appears to provide some empirical support for the notion that a lack of cultural 'fit' with the host culture may be associated with greater acculturative stress. Studies examining international students living in North America have found that those who emphasize an independent self-construal (consistent with the host culture) had better psychological adjustment compared to those whose self-construal was predominantly interdependent, and thus discrepant with the host culture (Cross, 1995; Oguri & Gudykunst, 2002; Yamaguchi & Wiseman, 2001). Furnham and Bochner (1982) found that the greater cultural disparity between sojourners' native and host culture, and hence the less skills they had to effectively deal with social situations, the more they experienced difficulties in social situations in the host culture. Furthermore, Asian international students' use of communication styles typically espoused in Western cultures, such as direct expression, was associated with better sociocultural adjustment in the host Western culture (Oguri & Gudykunst, 2002).

The experience of conflict between East Asian cultural values and mainstream Western norms has also been described in bicultural individuals, or those who possess dual cultural identities through extensive exposure to two cultural traditions (Hong, Morris, Chiu, & Benet-Martinez, 2000). Bicultural individuals may consist of cultural or ethnic minorities, individuals of mixed race, and immigrants (David et al., 2009). It is believed that bicultural individuals experience *bicultural stress* due to the need to negotiate between two sets of opposing cultural

norms and values (Benet-Martinez, Leu, Lee, & Morris, 2002; Roysircar & Maestas, 2002). Thus, East Asians in a Western context are thought to experience *cultural conflict* that involves interpersonal dimensions, as they are faced with the constant challenges of meeting the expectations of both their heritage culture and the mainstream culture, as well as interacting with people of other cultures (David et al., 2009; Sodowsky & Lai, 1997). An inability to effectively meet the valued standards and practices of both one's heritage culture and the mainstream culture is believed to place bicultural individuals at risk for developing psychological difficulties, such as depression and anxiety (David et al., 2009). Thus, it stands to reason that for East Asians living in a Western society, the conflict they experience between East Asian cultural values and mainstream Western norms may be associated with a perceived inability to meet the expected social standards of the prevailing norm, which contemporary theories of social phobia would suggest should result in higher levels of social anxiety.

Social Status and Social Anxiety

Theoretical models

There has been recent interest in the evolutionary basis of social anxiety, and models involving social status or hierarchy systems have been proposed (Gilbert, 2001; Ohman, 1986). The central feature of these models is that when individuals enter a social situation, they make determinations of social threat by judging their relative status ordered in terms of dominance versus submissiveness. It is believed that innate mechanisms in humans have evolved in order to enable the formation of social hierarchies, whereby the subordinate individual will be inhibited from open or confident competition and will display submissive types of behaviour, such as appeasing dominant others or avoidance of eye gaze (Ohman, 1986). The function of social hierarchies and the submission of subordinates to dominant others is thought to establish social order and reduce conflict with others.

According to these theories, social anxiety is linked to these innate mechanisms which allow for the formation of social hierarchies, namely, the defense mechanisms that lead individuals to display submissive behaviours. In essence, social anxiety is triggered in social situations where people perceive themselves to be relatively low in a status hierarchy of desirable traits, or at risk of losing their status, and is displayed in the form of submissive behaviours. Research has generally shown an association between social anxiety and submissive behaviour (Daly, 1978; Dow, Biglan, & Glaser, 1985), although other findings have shown that social anxiety is related to lower dominant behaviour (i.e., passivity) rather than active submission (Walters & Hope, 1998). Gilbert (2001) goes further to propose that social anxiety is embedded within a competitive mentality and appears to be related to times when individuals have to compete for, or defend their social resources, such as social approval or acceptance. In addition, it involves a fear of not being able to compete for such resources to support various social roles, as the evolved submissive behaviours of individuals with social phobia are thought to interfere with competition for resources and status acquisition.

To better understand the underlying processes that occur in making judgments of one's own relative social status, the notion of social status, or where one falls on the social hierarchy, can be considered within the broader context of Festinger's (1954) social comparison theory. According to this theory, people's perceptions of themselves are not context-free, but are based on how they compare themselves to those around them. Social comparisons are thought to serve the goal of self-evaluation (Festinger, 1954), but also have been shown to serve other motives, such as self-improvement, or self-enhancement or protection (White & Lehman, 2005). As such, those motivated by self-improvement often make social comparisons in which individuals assess themselves as not measuring up to, or being inferior to others (i.e., upward comparisons),

whereas those motivated by self-enhancement or protection often seek comparisons in which they assess themselves as doing better, or being superior to others (i.e., downward comparisons). Social comparisons are typically not effortful or consciously carried out, and may affect a person's self-evaluations without any intentional awareness (Heine et al., 2002). In more narrow terms of social status, people's perceptions of their own social rank are based on how they compare themselves to others with respect to a set of desirable attributes within a social context. Hence, the use of the term 'social status' in this paper reflects the social comparison process that occurs with respect to desirable attributes in a social situation.

Construct of Social Status

There is inconsistency and variability with respect to the definition and measurement of social status in the literature (Thompson & Subich, 2006). To begin with, traditional measures of social status often involve objective social science indices of income, occupation, and educational level (often referred to as *socioeconomic status).* However, recent research suggests that defining social status with respect to these objective variables does not take into account the notion of social status as a *psychological* phenomenon (Brown, Fukunaga, Umemoto, & Wicker, 1996). Recent findings indicate that people's subjective beliefs about their own social status, i.e., *subjective social status*, are related to physical and psychological well-being, independent of objective social status (Adler, Epel, Castellazzo, & Ickovics, 2000).

Various conceptualizations with respect to subjective social status have been described in the literature. Differential status identity (DSI) theory has been proposed as a framework to assess dimensions of social status that are socially and behaviourally salient, and that differentiate members of ingroups from those of outgroups (Fouad & Brown, 2000). Rossides (1997) has considered the multifaceted nature of social status, and defines it in terms of three

interrelated components: *economic resources* (similar to traditional definitions of social status), *social prestige*, which includes perceived occupational prestige, extent of association with other groups, and an individual's sense of value relative to similar others, and *social power*, which indicates perceived control over social values, including power to change or influence and political-legal power. Allan and Gilbert (1995) have described social rank as being comprised of comparisons of relative strength and power, social attractiveness, and degree of group fit.

Other distinctions concerning subjective social status have emerged from two research disciplines that have operationalized the construct of social status in different ways (Lease, Kennedy, & Axelrod, 2002; Vaillancourt & Hymel, 2006). First, developmental and clinical psychology traditions have measured social status using sociometric status ratings in child and adolescent peer groups. This method typically involves rating or nominating peers with respect to *social preference* (i.e., degree of likeability). On the other hand, sociological research often employs qualitative and ethnographic methods to measure respondents' perceptions and social constructions of status or *popularity* (Lease et al., 2002). Such measures tend to associate status with visibility, influence, and dominance (Vaillancourt & Hymel, 2006). Although sociometric and sociological indices of social status are related, they are not considered to be equivalent, particularly given the findings that individuals perceived to be high in popularity and social dominance are not necessarily rated as high in likeability by the peer group as a whole (Adler & Adler, 1998). Coie, Dodge, and Coppotelli (1982) acknowledged the issue of inconsistency in the operational definition of subjective social status, and conceptualized sociometric status in terms of the independent dimensions of social preference (i.e., liking or preference among peers) and social impact. Thus, although the literature presents varying conceptualizations of subjective social status, there appears to be some consensus that it is a multidimensional construct. The

current study is concerned with the construct of subjective social status, and will subsequently

refer to it as 'social status' for the sake of ease.

Social Status and Social Phobia

Social comparison processes have been implicated in social phobia because they provide

a foundation for self-evaluation (Antony, Rowa, & Liss, 2005). This is particularly important

given the tendency for individuals with social phobia to be excessively concerned with how they

are evaluated by others, as well as to engage in negative self-evaluation in social situations

(Clark & Wells, 1995). To date, relatively few studies have examined the relationship between

social comparison and social anxiety. In an indirect examination of this relationship, Mahone,

Bruch, and Heimberg (1993) found that perceptions of positive attributes in partners of a dyadic

interaction task were related to heightened behavioural signs of anxiety in participants,

suggesting that upward comparisons contributed to the participants' anxiety. Antony and

colleagues (2005) used diaries to compare social comparison processes among individuals with

social phobia and nonclinical controls. Findings showed that individuals with social phobia made

significantly more upward comparisons and significantly fewer downward comparisons relative

to controls. Furthermore, those in the social phobia group were approximately twice as likely as

controls to compare themselves to others on social behavioural dimensions such as displaying

signs of anxiety, social skills, personality, and sense of humour. Hence, research thus far appears

to suggest that social anxiety is associated with assessing oneself as not measuring up to others

with respect to socially desirable attributes and behaviours, or in other words, being relatively

inferior or lower in social status.

Culture and Social Status

Preliminary evidence suggests that there may be cultural differences in social comparison

seeking. In particular, differences in motivations for making social comparisons among East Asians and individuals of European heritage have been investigated. In the first cultural study of social comparison seeking, White and Lehman (2005) proposed that East Asians are more likely to seek social comparison information due to their collectivistic backgrounds that emphasize concern with others' evaluations and goals, as well as fitting into socially prescribed roles and standards--concerns which require comparison to others. This is in contrast with individualistic cultures that emphasize uniqueness and concern with personal goals (Markus & Kitayama, 1991), which do not necessarily require comparison with others. Furthermore, these researchers proposed that because East Asians have been found to be less likely to self-enhance (Heine & Lehman, 1995, 1997), and more likely to be motivated by self-improvement compared to those from Western cultures (Heine et al., 2001), East Asians are more likely to seek upward comparisons that will allow for such self-improvement. Consistent with these hypotheses, the study found that Asian Canadians were more likely to seek social comparisons, especially upward comparisons, with respect to performance on a spatial reasoning task compared to individuals of European heritage (White & Lehman, 2005). Another study comparing students in China and the U.S. found that higher collectivism scores were associated with an increased desire to make upward comparisons (Chung & Mallery, 1999). These studies did not measure social comparisons with respect to socially-based attributes and behaviours (i.e., perceptions of social status); however, if East Asians also make more upward comparisons in this domain, such comparisons would likely result in self-evaluation as being lower in relative social status.

Social comparisons and judgments of social status have also been noted at a cultural or group level. Social identity theory addresses the concept of *social identity*, which is the part of the self-concept that arises from knowledge of membership in social groups, along with the value

component attached to such group membership (Tajfel & Turner, 1979). In accord with social comparisons at the individual level, social identity theory asserts that evaluation of one's social identity is based on intergroup comparisons. Thus, favourable (i.e., downward) comparisons with outgroups result in perceived higher status of the ingroup, whereas unfavourable (i.e., upward) comparisons with outgroups lead to lower status of the ingroup (Terry, Pelly, Lalonde, & Smith, 2006). It has been suggested that intergroup comparisons for minority group members with majority members are likely to be upward, thus resulting in perceived lower status of minority group members compared to those of the dominant group (Zagefka & Brown, 2005).

Although members of both minority and majority groups generally have concerns about how they will be perceived in intergroup contexts (Vorauer, Main, & O'Connell, 1998), findings suggest that majority group members are less likely to reflect on their group's status (Kim-Ju & Liem, 2003), while minority group members are often very aware of possible discrimination and their devalued group status (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002; Pinel, 1999). Mendoza-Denton et al. (2002) referred to the process of *race-based rejection sensitivity* to reflect the notion that experiences of prejudice and discrimination can lead people to anxiously anticipate and react more intensely to such treatment in new intergroup contexts. With respect to Asian minorities in particular, Li (1994) (as cited in Li, Karakowsky, & Siegel, 1999) asserted that Asians are a relatively powerless social group in North America compared to mainstream European groups.

While there appears to be little systematic research on perceived social status of Asians either in a North American context or elsewhere, some evidence suggests that Asian minorities in Western countries are perceived by others to be lower in status compared to majority group members. Studies that surveyed the Canadian population have found that those of British origin

were ranked as highest in status, followed by those of various other European origins, while the lowest evaluations of status were given to minority groups, including Asians (Pineo, 1977). Along the same lines, a study conducted in Australia found that White Australians considered themselves to be significantly higher in status compared to Asian Australians (Johnson, Terry, & Louis, 2005). However, a study by Liu, Campbell, and Condie (1995) found that Asians and European-heritage individuals perceived themselves to be of equal status. In all of these studies, the construct of social status that was employed was not validated, so it is unclear how 'social status' was interpreted by respondents (i.e., in terms of objective measures of socioeconomic status, such as income and education, versus more subjective measures of social status, such as social preference or social rank/prestige).

Studies have also indirectly examined cultural perceptions of social status by measuring perceived attractiveness. Level of attractiveness has been found to correlate highly with social status (Coie, Dodge, & Coppotelli, 1982; Vaillancourt & Hymel, 2006). These studies have generally found that Asians perceived themselves to be less physically attractive compared to their European-heritage counterparts (Evans & McConnell, 2003; Liu et al., 1995; White & Chan, 1983). Thus, although the studies reviewed are limited by imprecise measures of social status, the extant research suggests that the social status of Asians is perceived by both European-heritage and Asian individuals as being lower compared to that of Westerners.

In returning to the evolutionary theories of social anxiety discussed at the beginning of this section, relative social status is often manifested by displays of dominant and submissive behaviours that will allow for the formation of social hierarchies. Thus, people who perceive themselves as being higher or lower in status in a social interaction will behave in appropriate ways to reflect their perceptions. A number of studies have pointed to the existence of status-

related social behaviours across cultures (Kowner & Wiseman, 2003). People who perceive themselves to be of higher status are more likely than those of lower status to initiate a conversation and speak more loudly (Packwood, 1974), interrupt a conversation (Natale, Entin, & Jaffee, 1979), and touch others informally (Hall, 1996). According to Kowner and Wiseman (2003), the perception of having higher status tends to lead to dominant and assertive behaviours, where perceptions of having lower status often results in submissive and considerate behaviours which are thought to appease those in higher status positions and thus lessen their aggression.

As discussed previously, East Asian cultural values tend to promote more unassertive, reticent, and submissive behaviours that appear to be consistent with low-status behaviours. Hence, as a result of engaging in these normative low-status behaviours, East Asians in a Western context may perceive themselves to be lower in a status hierarchy of desirable attributes and behaviours relative to Westerners. Given that collectivistic cultures are typically considered to be hierarchical in contrast to individualistic societies that are more egalitarian, East Asians may be more likely to accept inequality as part of social order (Triandis, 1995), which may perpetuate their perceptions of lower status in a Western context.

In summary, various lines of evidence point to the notion that East Asians may be more likely to perceive themselves as being lower in social status compared to those of European-heritage when in a Western context. One main explanation for this is related to East Asian cultural values which may promote upward comparisons due to self-improvement tendencies, as well as low-status behaviours consistent with collectivistic values. Another reason may be associated with East Asians making upward social comparisons relative to the dominant Western group due to their minority group status. Thus, according to the evolutionary model of social anxiety, East Asians' perceptions of lower status in a Western context would be associated with

higher reports of social anxiety in comparison to European-heritage individuals.

Study Hypotheses

The goal of this study was to examine whether culturally-influenced social standards, social self-efficacy, and perceived social status account for differences in self-reported social anxiety among East Asian-heritage (EAH) and European-heritage (Euro) individuals in North America. The current study included an overseas East Asian sample to control for the sociocultural context of East Asian populations, and thus provide a stronger test of the study hypotheses. Two main competing hypotheses that encompassed these social contextual variables were proposed to explain why Asian-heritage individuals score higher on Western-conceptualized measures of social anxiety.

First, the *Asian socialization hypothesis* proposed that higher levels of self-reported social anxiety in EAH individuals compared to their European-heritage counterparts are related to their greater exposure to East Asian cultural values. That is, individuals with greater exposure to East Asian cultural values score higher on measures of social anxiety because: 1) social anxiety-related behaviours are more normative in East Asian culture (i.e., there is construct overlap between social anxiety symptoms and East Asian social behavioural norms); 2) East Asians tend to make upward social comparisons; and 3) East Asians tend to engage in low status-related behaviours.

According to this hypothesis, personal and cultural acceptance of attention-seeking behaviours as well as perceived social status should decrease with increasing degree of Asian socialization. Specifically, overseas East Asians would have the most exposure to East Asian cultural values, and thus should report the lowest levels of personal and cultural acceptance of attention-seeking behaviours, followed by 1st-generation EAH individuals, 2nd-generation EAH

individuals, and then Euro individuals. Similarly, since adhering to East Asian cultural values appears to be associated with making upward social comparisons, as well as the tendency to engage in low status-related behaviours, overseas East Asians should report the lowest levels of perceived social status, followed by 1st-generation EAH individuals, 2nd-generation EAH individuals, with Euro individuals reporting the highest levels of perceived social status. Based on the *Asian socialization hypothesis*, overseas East Asians would score the highest on measures of social anxiety, while Euro individuals would score the lowest.

As part of the *Asian socialization hypothesis,* the current study also explored whether culturally-influenced values and social standards may also affect *appraisals* of social anxiety symptoms and associated behaviours, and hence, the level of distress one experiences due to having these symptoms. It was proposed that appraisals of social anxiety symptoms would differ according to prevailing cultural standards or norms. In line with the notion that social anxiety-related behaviours are more normative in East Asian cultures, overseas East Asians should appraise symptoms of social anxiety as less problematic compared to Euro and EAH individuals. Furthermore, it was predicted that EAH individuals residing in North America would appraise symptoms of social anxiety as less distressing when in the context of an East Asian cultural setting, compared to a Western cultural context, and that EAH and Euro individuals would not differ in their appraisals of social anxiety in the context of Western cultural norms.

Second, the *cultural discrepancy hypothesis* posits that higher reports of social anxiety in EAH individuals are associated with the experience of discrepancy or dissonance with respect to one's heritage culture and/or ethnic status and the mainstream Western culture. Based on this hypothesis, bicultural (i.e., EAH) individuals should report lower levels of social self-efficacy compared to members of unicultural groups, or those whose heritage culture is consistent with

the dominant culture (i.e., Euro individuals and overseas East Asians). In addition, relative to members of the dominant culture in which they reside, bicultural individuals should report lower levels of perceived social status compared to members of unicultural groups. Thus, according to the *cultural discrepancy hypothesis,* bicultural groups should score higher on measures of social anxiety compared to unicultural groups. This hypothesis will be further explored by examining whether the experience of discrepancy between one's heritage culture and/or ethnic status and the mainstream Western culture is associated specifically with social anxiety, or whether it is more broadly related to number of psychological correlates (i.e., generalized distress) associated with acculturative or bicultural stress, including higher levels of depression.

The present study employed a correlational design to test the two main hypotheses, which involved exploring whether the corresponding social contextual variables play a role in the mechanisms by which EAH individuals report greater social anxiety compared to their Euro counterparts. The study focused on individuals of East Asian descent in an effort to minimize the heterogeneity of the Asian comparison group. In addition to the inclusion of an overseas East Asian (EA) sample, Asian groups with varying levels of exposure to East Asian cultural values within North America were included to examine East Asian within-group differences. Findings from this study will shed light on the conceptualization and experience of social anxiety among East Asian and Western populations. Moreover, it will provide further understanding of important sociocultural and cognitive processes linked to social anxiety, as well as the processes involved in acculturative and bicultural stress. From a clinical standpoint, findings from this research will inform the assessment and diagnosis, as well as culturally-sensitive treatment of social anxiety and social phobia in East Asian populations.

Method

Measurement Development

Prior to conducting the main study, a measurement development phase was carried out to devise and adapt existing measures in order to suitably address the two main study hypotheses. The main purpose of this study phase was to obtain open-ended feedback from a community sample to assist in the development and revision of measures.

Participants

Participants were 15 adults recruited from the community, comprising East Asian-heritage (EAH) individuals (*n* = 9) and European-heritage (Euro) individuals (*n* = 6) residing in Vancouver. The use of a community sample for the measurement development phase of the study was intended to increase the representativeness of participant feedback. Participants were recruited from advertisements posted around UBC campus, as well as through contacts known to the co-investigator of the study from both academic and non-academic settings. These contacts were approached either in person, by telephone, or via e-mail, and given a brief verbal description of the study.

Participants were 18 years of age or older. Inclusion criteria for the EAH group required that individuals identified themselves as being of East Asian ethnicity (i.e., Chinese, Korean, or Japanese), and had an East Asian cultural background. The EAH group included individuals of first-generation (i.e., born in a native East Asian country, including China, Hong Kong, Taiwan, Singapore, Japan, or Korea), or second-generation (i.e., born in Canada or the U.S.). Inclusion criteria also required that both parents of EAH participants were born in a native East Asian country and be of East Asian ethnicity (i.e., Chinese, Japanese, or Korean). Individuals born in Southeast Asian countries (e.g., Malaysia, Thailand, the Philippines, etc.) were excluded. With

respect to the Euro group, inclusion criteria required that participants were Caucasians born in

North America or who immigrated to North America as children or adolescents from a Western

country. Also, both parents of Euro participants had to be born in either North America or a

Western country. Individuals of mixed racial backgrounds or who were adopted into families of

different cultural backgrounds were excluded. The final sample of participants consisted of 13

females and 2 males. The average age of all participants was 29.7 years ($SD = 9.44$), with an age

range of 20 to 56 years.

Procedure

Participants were asked to come into the laboratory to take part in the study. Participants

were first provided with a scripted verbal description of the study, including the purpose of the

study (i.e., to help with the development of new measures), study procedures, as well as issues of

confidentiality. They were then asked to respond to a paper-and-pencil questionnaire, consisting

of two measures under development. While filling out the questionnaire, they were also

instructed to take note of any instructions or items that they found to be confusing or ambiguous,

as well as any errors they may have detected while responding to the questionnaire. After

completing the questionnaire, participants were asked to provide verbal, open-ended feedback to

the experimenter on specific aspects of each measure, including appearance and layout, clarity

and interpretation of instructions, clarity of question items, and appropriateness of response

scales. A standardized form was used by the experimenter to obtain this information. The two

measures were then modified and refined in an iterative manner based on information provided

by participant feedback. Participant responses obtained on the questionnaires under consideration

were also examined to ensure that each item had adequate response variability (i.e., absence of

ceiling or floor effects), and thus increase confidence in the sensitivity of the measures. With

respect to remuneration, participants were entered into a random draw to win one of two $50 gift certificates.

Measures

Social Experiences Scale (SES). The Social Experiences Scale is a self-report measure that was developed for the present study to assess appraisals of Western-based social anxiety symptoms based on a respondent's judgments of a target individual who experiences such symptoms. As one of the main hypotheses of this study concerns the degree of subjective distress arising from appraisals of social anxiety symptoms (i.e., meta-distress), the SES was originally designed to measure the respondent's *own* perceived distress and impairment with regard to experiencing social anxiety-related symptoms. However, initial piloting of this measure demonstrated problems with this approach. First, it was difficult for respondents to differentiate between the terms 'distress' and 'impairment', so it was problematic to assess these as separate variables. Initial piloting also revealed that when respondents were asked to rate how distressed they would feel if they experienced various symptoms of social anxiety, it was difficult for the instructions to convey distress about having symptoms of social anxiety (i.e., meta-distress), rather than distress about being in the social situation itself (i.e., social anxiety). Based on these findings, it was felt that these difficulties might be resolved if respondents were asked to rate how they appraised a target individual who was experiencing symptoms of social anxiety, rather than to rate themselves. Although such a rating does not directly assess respondents' subjective distress about experiencing social anxiety symptoms, it is reasonable to expect that respondents' appraisals about another person with social anxiety are reflective of how they would appraise their own symptoms of social anxiety.

Pilot versions of the SES presented to participants generally involved a short vignette

about a man in a social situation (i.e., a friend's wedding). Given that one of the current study

questions specifically examines whether appraisals of social anxiety symptoms are moderated by

cultural context for East Asians residing in North America, the SES also included an

experimental prime for cultural context. Thus, two separate scale versions were developed to

measure a respondent's judgments of the target person in either an Asian or Western social

setting. For example, in the Asian context condition, instructions asked EAH respondents to

imagine that the wedding couple is "Asian" when responding to the items. In contrast, for the

Western context condition, EAH respondents were asked to imagine that the wedding couple is

"Canadian". The cultural prime manipulation was administered randomly only to EAH

participants given their increased likelihood of having been exposed to both types of cultural

settings. Euro participants were only given the Western cultural prime in the instructions.

The vignette was followed by a list of items describing various social anxiety-related

symptoms. Respondents were instructed to rate what they would think of the man in the vignette

if he were to experience each of the social anxiety-related items, on a 5-point Likert-type scale

ranging from 0 ("There's nothing wrong with what he's feeling/experiencing; it seems normal to

me") to 4 ("There's a problem with what he's feeling/experiencing; it seems strange to me").

Items on the SES describing various symptoms of social anxiety were adapted from established

social anxiety measures. Items were chosen from the Social Interaction and Anxiety Scale

(SIAS) (Mattick & Clarke, 1998), the Social Phobia and Anxiety Inventory (SPAI) (Turner,

Beidel, Dancu, & Stanley, 1989), and the Social Avoidance and Distress Scale (SADS) (Watson

& Friend, 1969), as these measures have been employed in Asian-Western cross-cultural studies,

and together, cover a range of cognitive, behavioural, and physical symptoms of social anxiety.

Items that were considered to be redundant, awkward in content or form, or not reflecting

symptoms of social anxiety in a social interactional context (i.e., symptoms such as eating/writing in public) were excluded. Selected items that were reverse-scored in the original measure (in the direction of decreasing social anxiety) were modified to represent social anxiety symptoms.

In addition to participants being asked to provide feedback with respect to clarity/appropriateness of instructions, question items, and the response scale, a manipulation check was carried out for the cultural prime used in the SES to ensure that participants were responding to the questions based on either an Asian or Western social context. This check involved asking participants to describe the context that they had imagined when responding to the question items. They were also asked whether they would have different expectations of social behaviour if the social setting was "Asian" versus "Canadian".

Participant feedback revealed that for many, the cultural prime of a "Canadian" social setting elicited thoughts of a "mix" of people from different ethnic groups, with people of European heritage being more predominant in this setting. The finding that the "Canadian" social setting primed a social setting that included a mix of ethnic groups is not surprising given that the participants reside in a multicultural city. With respect to the Asian cultural prime, all EAH participants responding to this scale version unambiguously described imagining an Asian social setting when responding to the question items. Given that the findings from the manipulation check appeared to indicate that the instructions for priming Asian versus Canadian cultural contexts were valid, these instructions were retained in the measure.

Some participants expressed confusion about the ethnicity of the target person in the vignette, and stated that their responses would have been influenced by the target's ethnicity. The instructions were therefore revised to include a statement asking respondents to imagine the

target person to be of similar ethnicity to their own. This modification was also thought to be closer to the original intended goal of appraising one's own social anxiety. Feedback also showed that many of the EAH participants responding to the Canadian cultural prime version were unclear whether the target person was new to, or unfamiliar with the cultural setting, and stated that this would influence how they would appraise the target's symptoms of social anxiety. Thus, a statement was added in the instructions to imagine the target person as being familiar with the social/cultural setting (i.e., that language is not a problem). It was thought that this would reduce the possibility of a North American context per se being confounded by *unfamiliarity* with the social context.

Many participants also communicated that the social context of a wedding was not representative of other social settings. As well, participants' responses indicated that the gender of the target person would also influence how they might appraise symptoms of social anxiety. Thus, three vignettes were added to represent different social interactional situations with varying parameters with respect to level of formality and structure of the social situation (i.e., work party, friend's birthday party, and work lunch), as well as both male and female target persons. A description of the final SES measure, as well as initial psychometric data is found under the Main Study section.

Reactions to Social Behaviour Questionnaire – Modified (RSBQ-M). The RSBQ-M is a self-report measure developed by Heinrichs et al. (2006) that assesses both personal and cultural norms with respect to various social behaviours. This measure was intended to assess perceived social standards or norms for the present study. The RSBQ has been employed in a previous cross-national study comparing perceived social norms among individualistic and collectivistic

cultures (Heinrichs et al., 2006). Further details regarding the RSBQ-M are included in the subsequent Main Study section.

Briefly, the RSBQ-M is comprised of 17 hypothetical vignettes describing the social behaviours of individuals in a variety of social situations. These vignettes are designed to tap either socially assertive, *attention-seeking* behaviours, or socially withdrawn, *attention-avoiding* behaviours. Respondents are asked to read each vignette and then respond to two different questionnaire items that are grouped into two subscales: the Personal Norm scale (i.e., the respondent's personal judgment of how appropriate the behaviour was), and the Cultural Norm scale (i.e., how appropriate the main actor's behaviour would be in the respondent's culture). Responses for each question are rated on 6-point Likert-type scales from 0 to 5. Thus, both scales consist of 17 items with each scale yielding a range of responses from 0 to 85.

Pilot work was carried out for the Reactions to Social Behaviour Questionnaire-Modified to ensure that the vignettes were interpreted as intended by all participants (i.e., validity check), as well as to pilot small modifications to the questionnaire. Specifically, a modification to the measure involved providing a cultural reference for the question item in the Cultural Norm scale that asks "How typical is that behaviour for people in your culture in general?" Since one of the main hypotheses of this study involved examining differences in social standards or norms of behaviour across East Asian and European-heritage groups, it was necessary for participants to consider their heritage culture when responding to this question. That is, it was intended that European-heritage participants consider North American/Western culture as the reference when responding to this question, and that East Asian participants consider Asian culture as the reference even if they were born in North America and were familiar with North American culture. While there may be less ambiguity in how respondents interpret their "culture" in

countries with one predominant culture (i.e., East Asian countries), this question is likely more ambiguous for individuals living in North America where there may be exposure to more than one culture.

A validity check was also carried out with respect to the 17 vignettes of the RSBQ-M to assess that the behaviours depicted in the vignettes accurately reflect the two types of behaviours (i.e., attention-seeking vs. attention-avoiding), and that respondents were interpreting the social behaviours represented in the vignettes as intended. Participants were presented with a list of behavioural descriptors and asked to either choose from this list or provide their own description of each of the behaviours depicted in the vignettes. Examples of adjectives provided in the list included: *open, aggressive, reserved, expressive, inattentive, carefree,* and *restrained.* Participants were also asked to indicate whether they considered the behaviour in each vignette to be more typical of people of East Asian versus Western cultures.

Participant feedback indicated that people of East Asian heritage who had been residing in North America for some time (i.e., bicultural individuals) found the Cultural Norm scale question item to be ambiguous in terms of whether "your culture" referred to Asian culture versus North American culture. As well, those who recently emigrated from an East Asian country were unclear as to whether this question referred to their native culture or North American culture. Furthermore, some European-heritage participants did not know whether to respond to this question with reference to North American culture, or the European culture from which they descended. Through the pilot work, it was found that modifying the cultural norm question item to include phrases such as "heritage culture", "ethnic culture", or "culture of birth" to provide a cultural reference, was still ambiguous to participants. Thus, the final revision to the Cultural Norm scale question item on the RSBQ-M involved explicitly stating the reference

culture that corresponded to the respondent's heritage culture (i.e., "How typical is that behaviour for people of Canadian/Asian culture in general?"). Thus, two separate versions of the RSBQ-M were developed--one to administer to Euro individuals, and the other for EAH individuals. Correspondingly, there was a small revision in the instructions of the RSBQ-M describing the purpose of the measure as assessing how common behaviours are in "Canadian/Asian culture". The original version of the Cultural Norm scale question item in the RSBQ-M (i.e., "How typical is that behaviour for people in your culture in general?") was retained for overseas East Asian individuals, given the unlikelihood that such individuals would interpret "your culture" in an ambiguous way.

For the most part, participants described all vignettes intended to depict socially-withdrawn, attention-avoiding behaviors with similar descriptor words such as "shy", "modest", "reserved", etc., and indicated that the behaviours from these vignettes would be more typical in Asian cultures. Participants also described all vignettes intended to depict socially assertive, attention-seeking behaviours with similar descriptor words such as "assertive", "outgoing", "likes to be centre of attention", "showing off", and described these behaviours as being more typical of Western cultures. Thus, respondents appeared to be interpreting the social behaviours represented in the vignettes as intended.

<center>*Main Study*</center>

Research Design

This study employed a cross-sectional, between-groups design. The between-groups independent variable was cultural group. In testing the *Asian socialization hypothesis*, four cultural groups were compared (i.e., European-heritage, 2nd-generation East Asian, 1st-generation East Asian, and overseas East Asian). For the *cultural discrepancy* hypothesis, unicultural versus

bicultural groups were compared (i.e., European-heritage and overseas East Asian versus 2nd-generation East Asian and 1st-generation East Asian, respectively). Thus, based on theoretical assumptions regarding cultural values, the overseas Korean and Chinese groups were combined in these analyses. The main dependent variables employed to test the two main hypotheses were social standards of behaviour (as measured by acceptance of attention-seeking behaviours), social self-efficacy, and perceived social status as measured by social comparison and submissive behaviour.

Participants

A total of 692 individuals participated in the current study. A cross-national sample of university students was obtained from three different regions: Vancouver, Canada; Seoul, Korea; and Changsha, China. Table 2 presents the demographic characteristics of each of the samples.

Vancouver. The majority of participants in the Vancouver sample were recruited from the University of British Columbia, with the remainder of participants residing in Vancouver (during summer break) but attending universities in other parts of Canada. Participants in the Vancouver sample consisted of two groups: East Asian-heritage (EAH) individuals and European-heritage (Euro) individuals. The East Asian-heritage group included individuals of first-generation (i.e., born in a native East Asian country), or second-generation (i.e., born in Canada or the U.S.). In this study, an *East Asian country* included China, Hong Kong, Taiwan, Japan, Korea, and Singapore (in Singapore, individuals of Chinese ethnicity make up approximately 75% of the population). Inclusion criteria required that both parents of EAH participants were born in a native East Asian country and be of East Asian ethnicity (i.e., Chinese, Japanese, or Korean). Individuals born in Southeast Asian countries (e.g., Malaysia, Thailand, the Philippines, etc.) were excluded, given the tendency for research on Asian cultures

to group together East Asian, Confucian-based cultures, such as Chinese, Japanese, and South Korean (Cheah & Park, 2006), and the recognized heterogeneity among various Asian subpopulations (Iwamasa, 1997). EAH individuals who had spent seven years or more living outside of a native East Asian country or North America were excluded. This latter exclusion criterion was employed in a previous cross-cultural study of social anxiety (Hong & Woody, 2007).

The final EAH sample consisted of 280 participants of 1st-generation ($n = 187$), and 2nd-generation ($n = 93$). A total of 22 1st- and 2nd-generation EAH participants were excluded due to having a non-East Asian cultural background ($n = 7$), being born outside of North America or an East Asian country ($n = 7$), and having parents who were born outside of an East Asian country or who were not of East Asian ethnicity ($n = 8$). Of the AH sample, 84% were Chinese, 13% were Korean, 2.5% were of Japanese descent, and less than one percent was of a mixed East Asian background. As shown in Table 2, 1st- and 2nd-generation AH individuals were relatively similar with respect to gender ratio, age, and parental educational background.

The European-heritage (Euro) group was comprised of Caucasians born in North America, whose parents were either born in North America and were of European heritage or born in a Western European country. This particular region of Europe was selected as inclusion criteria given the empirical evidence pointing to levels of individualism in this region that are closer to those of North America compared to Eastern or Southern European countries (Hofstede, 1980; Oyserman et al., 2002). Individuals in the Euro group who had spent more than 7 years living outside of North America were excluded. The term *North America* will refer to both Canada and the United States given that the cultural literature has clearly assumed and provided empirical evidence that there is approximate equivalence between the cultures of Canada and the

U.S. in terms of the individualism-collectivism dimension (Oyserman et al., 2002). A total of 103 participants comprised the final sample of the Euro group, with 79% of the sample being female (22 males and 81 females). A total of 44 Euro participants were excluded due to not having a North American or Western European background ($n = 17$), being born outside of North America ($n = 15$), and being over 30 years of age ($n = 12$).

Korea. Participants in this sample were recruited from Seoul National University in Seoul, capital of South Korea. Seoul has a population of over 10 million. Selection criteria for the overseas Korean sample required that individuals identify themselves as having a Korean cultural background, have resided no more than four consecutive years in North America or another Western country (e.g., Western Europe), and have lived less than a total of seven years in any non-East Asian country. The final overseas Korean sample consisted of 189 participants, with 33% of the sample being female (126 males and 63 females). A total of four participants were excluded due to living in a Western country for more than 4 consecutive years ($n = 2$), having a Chinese cultural background ($n = 1$), and being over 30 years of age ($n = 1$).

China. Participants in this sample were students from Hunan Normal University, a public university in Changsha, the capital of Hunan Province in the People's Republic of China. Changsha has a population of approximately six million people. Hunan Normal University is a provincial-level university, but also includes a small proportion of international students. Participants in the China sample included individuals who identified themselves as having a Chinese cultural background. As well, eligibility criteria for this sample required that individuals resided no more than four consecutive years in North America or another Western country, and had lived less than a total of seven years in any non-East Asian country. The final sample consisted of 120 participants, with 40% of the sample being female (72 males and 48 females).

Descriptive Measures

Demographics. General demographic information was collected including gender, age, country of birth and other countries lived in, cultural background, and level of education. As well, information on parents' country of birth, cultural background, and level of education was collected. This demographic questionnaire was placed at the end of the questionnaire package in order to reduce the saliency of the culture-related hypotheses of the study.

Singelis Self-Construal Scale (Singelis SCS; Singelis, 1994). The SCS is a 30-item instrument that assesses one's view or understanding of the self. The SCS is based on the cultural model of Markus and Kitayama (Singelis, 1994), and in particular, on their distinction between the view of self as independent, unique, and separate from others, which is characteristic of individualistic cultures (e.g., North American), and the view of self as interdependent or connected with significant others, characteristic of East Asian and other collectivistic societies. The SCS was included as a cultural variable to confirm differences in cultural values between groups and to examine whether potential between-group differences with respect to the two main hypotheses are attributable to cultural values. The scale consists of 15 items designed to measure independent self-construal (e.g., *I enjoy being unique and different from others in many respects; I act the same way no matter who I am with)*, and 15 items to assess interdependent self-construal (e.g., *It is important for me to maintain harmony within my group; If my brother or sister fails, I feel responsible).* Items are rated on a 7-point Likert-type scale, with anchors ranging from "Strongly disagree" (1) to "Strongly agree" (7).

Cronbach's alpha coefficients for the Independent and Interdependent subscales were reported to range between .69 and .74, respectively (Singelis, 1994). In addition, Okazaki (2000) reported alpha coefficients for the Independent and Interdependent subscales as .60 and .63,

respectively, in White Americans, and .51 and .58, respectively, in Asian Americans. In a cross-cultural study that included a Chinese Canadian sample, Cronbach's alpha coefficients for the Independent and Interdependent subscales were found to be .81 and .54, respectively, in Euro-Canadians, and .74 and .72 in the Chinese Canadian sample, respectively (Hsu & Alden, 2007). In a study employing a community sample, Hong and Woody (2007) reported alpha coefficients for the Independent and Interdependent subscales of .67 and .65, respectively, in Euro-Canadians, and .64 and .72, respectively, in Korean immigrants. Although data on construct validity for the SCS are limited, findings that individuals from East Asian cultural backgrounds report higher interdependent and lower independent self-construal compared to those from Western cultures provide some support for the construct validity of the scale (Singelis, 1994).

Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 2000). The VIA is a 20-item instrument that measures the extent to which people have values and engage in behaviours that are characteristic of the culture in which they were born (i.e., *heritage* culture) versus North American (i.e., *mainstream)* culture. The VIA is made up of two subscales, the Heritage subscale and the Mainstream subscale, each consisting of 10 items. The items were generated in pairs with respect to content area, with one item referring to heritage culture and the other item referring to North American culture. Each item is rated on a 9-point scale, ranging from "Strongly disagree" (1) to "Strongly agree" (9), and summed to yield Heritage and Mainstream scores. Higher subscale scores represent higher levels of identification with the corresponding culture. Sample items on the subscales include the following: *I often participate in heritage (North American) cultural traditions; I would be willing to marry a person from my heritage (North American) culture.* Ryder et al. (2000) found significant associations between the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) and the VIA Heritage and

Mainstream subscales (rs = -.30 and .54, respectively). The VIA was administered only to participants in the Vancouver sample (i.e., Euro and 1st- and 2nd-generation EAH groups) in order to confirm differences in levels of heritage and mainstream acculturation between groups within this sample.

Dependent Measures

Reactions to Social Behaviour Questionnaire (RSBQ; Heinrichs et al., 2006). The RSBQ is a self-report measure that assesses personal and cultural norms (i.e., personal and cultural acceptance) with respect to various social behaviours. This measure was included in the current study to assess perceived social standards or norms. It is comprised of 16 hypothetical vignettes describing the social behaviour of a target individual in a variety of social situations. These vignettes are designed to tap either socially assertive, *attention-seeking* behaviours (e.g., "*You are attending a course in which a presentation is given. The female speaker asks for volunteers needed for a brief role play. A fellow student sitting beside you immediately volunteers and is asked by the speaker to come in front of the class.*"), or socially withdrawn, *attention-avoiding* behaviours (e.g., "*A friend of yours shows you a new jacket that she has just bought. While looking at it, she observes irregularities in the material. She seems disappointed but decides not to return the jacket to the store.*"). Respondents are asked to read each vignette and respond to three question items regarding their personal judgment about 1) how appropriate the behaviour was (i.e., individual norms for social adequacy), 2) the degree of positivity/negativity toward the vignette's main actor (i.e., social evaluation), and 3) how appropriate the main actor's behaviour would be in the respondent's culture (i.e., cultural norms for social adequacy). These question items were grouped into two subscales: the Personal Norm scale (consisting of the average of the two questions regarding individual norms and social evaluation), and the Cultural Norm scale.

Thus, both scales consist of 16 items with each scale yielding a range of responses from 0 to 80. In both scales, lower scores indicate a preference for *attention-avoiding* social behaviours while higher scores reflect a preference for *attention-seeking* social behaviours. Responses for each question are rated on 6-point Likert-type scales from 0 to 5.

With respect to psychometric data, the Cultural Norm scale was shown to have good cross-cultural reliability, with a Cronbach's alpha of .71 (Heinrichs et al., 2006). The Personal Norm scale, however, demonstrated only satisfactory internal consistency ($r = .40$) across cultures. Although data on the validity of the RSBQ is currently limited, Heinrichs et al. (2006) found no significant correlation ($r = .05$) between the Personal Norm scale and the Cultural Norm scale. The RSBQ has recently been modified to the RSBQ-M, with changes and additions made to vignettes, and the removal of the individual norms for social adequacy question items. Thus, the RSBQ-M consists of two scales (Personal Norm and Cultural Norm), both of which are comprised of 17 vignettes. Data pertaining to the RSBQ-M's psychometric properties are currently being collected with some initial findings of improved reliability of the RSBQ-M (N. Heinrichs, personal communication). Given these initial findings, the RSBQ-M was employed for this study, with modifications made to the Cultural Norm scale for the versions administered to the Vancouver samples as described earlier in the Measurement Development section.

Interpersonal Competence Questionnaire (ICQ; Buhrmester, Furman, Wittenberg, & Reis, 1988). The ICQ is a 40-item self-report measure designed to assess five domains of self-rated interpersonal competence: 1) initiating relationships, 2) disclosing personal information, 3) negative assertion, 4) providing emotional support and advice, and 5) managing interpersonal conflict. The ICQ was used for this study to measure levels of social self-efficacy. For the purposes of this study, only the Initiation, Disclosure, and Negative Assertion competence

subscales were employed as these constructs correspond to behavioural constructs shown to differ between East Asian and Western cultures (e.g., assertiveness, reticence). Each item of the ICQ briefly describes a common interpersonal situation. Respondents are asked to indicate their level of competence in handling each situation using Levenson and Gottman's (1978) 5-point rating scale ranging from 1 = "I'm poor at this; I'd feel so uncomfortable and unable to handle this situation, I'd avoid it if possible" to 5 = "I'm extremely good at this; I'd feel very comfortable and could handle this situation very well". Thus, higher ratings on the scale correspond to greater social self-efficacy while lower ratings indicate lower social self-efficacy. Items within each subscale are averaged to create subscale scores.

Buhrmester et al. (1988) have provided strong support for the psychometric properties of the ICQ. Confirmatory factor analysis on the 40 items support the five-factor model hypothesized to underlie the items of the ICQ, with a fit index of .90. Internal consistencies for the Initiation, Disclosure, and Negative Assertion subscales were found to be good, with Cronbach's alphas ranging from .82 to .86. Significant correlations between the three subscale scores were moderate, ranging from $r = .41$ to $r = .52$, indicating moderate levels of generalizability across these three domains of competence. Four-week test-retest reliabilities for the three subscales of interest were found to be high: Initiation, $r = .89$; Disclosure, $r = .75$; and Negative Assertion, $r = .79$.

With respect to concurrent validity, the three subscales of interest were significantly correlated with reported frequency and initiation of dates, and perceived popularity (rs ranging from .18 to .41). Furthermore, all three subscales were positively correlated with the Dating and Assertiveness Questionnaire (DAQ) (rs ranging from .25 to .58) and negatively related to the Social Reticence Scale (SRS) (rs ranging from -.32 to -.69). Moderate correlations were also

found between self and roommate ratings of competence, with *r*s ranging from .29 to .37 for the three subscales, providing some support for the convergent validity of the ICQ scales. Both the DAQ and SRS also provided evidence for the discriminant validity of the three ICQ subscales, given that dating skills scores were more strongly correlated with ICQ Initiation competence ratings (*r* = .58) than to Disclosure competence ratings (*r* = .44) and Negative Assertion ratings (*r* = .44). Also, DAQ assertion scores were highly correlated with ICQ Negative Assertion scores (*r* = .58) compared to Initiation competence scores (*r* = .33) or Disclosure competence ratings (*r* = .25). Furthermore, SRS ratings and Social Skills Inventory scores were strongly related to Initiation competence scores (*r*s = -.69 and .70, respectively) but only moderately correlated with other ICQ subscales.

More recently, the ICQ was revised so that item wording has been changed from declarative to question phrasing, and items within the Initiation and Disclosure subscales were slightly reworded (Buhrmester, 2002). As well, more substantial revisions were made to the assertion subscale items from a "negative" form of assertion (e.g., turning down a request that is unreasonable) to an "influence" form of assertion (e.g., getting people to go along with what you want). For the present study, the slightly revised items in the Initiation and Disclosure subscales were employed. However, items on the original Negative Assertion subscale were retained for this study (but changed to question form) as they were thought to better correspond to items on established assertiveness measures. Initial validity data for the revised versions of the Initiation and Disclosure subscales is available on adolescent samples. Buhrmester (2002) found significant moderate correlations between self- and other (i.e., mother, father, friend) ratings across revised ICQ subscales (*r*s ranging from .26 to .51). As well, the ICQ was a good correlate of success in close friendships in terms of quality (*r* = .67) and quantity (*r* = .45) of friendships.

Furthermore, scales on the revised ICQ were generally associated with lower loneliness and depression, and with greater self-esteem, although correlations varied somewhat by age and gender (Buhrmester, 2002).

Social Comparison Rating Scale (Allan & Gilbert, 1995). The Social Comparison Rating Scale (referred to as the SCRS in the current study) is an 11-item measure developed to assess global dimensions of social comparison, primarily derived from evolutionary theory. These dimensions include judgments of social rank (i.e., comparisons of relative strength, power, and aggressiveness), relative attractiveness (i.e., the ability to have others choose in one's favor), and group fit (i.e., comparisons of relative similarity to others). The scale was developed using a semantic differential methodology, which involves presenting respondents with an incomplete sentence followed by a series of bipolar global constructs. The scale asks respondents to complete the sentence "*In relationship to others I feel…*" by circling a number on a 10-point scale anchored with each of the following dimensional constructs: *inferior-superior, incompetent-more competent, unlikeable-more likeable, left out-accepted, different-same, untalented-more talented, weaker-stronger, unconfident-more confident, undesirable-more desirable, unattractive-more attractive*, and *an outsider-an insider*. Higher scores on all items indicate higher judgments of social rank, attractiveness, and group fit in comparison to others, while lower scores on all items represent lower perceptions of the three domains in relation to others.

The factor structure of the SCRS was examined in both a student (both undergraduates and postgraduates) and clinical population (Allan & Gilbert, 1995). For the student sample, the factor structure was somewhat consistent with theoretical predictions, given that the solution suggested two clear factors related to social rank and social group fit, with items measuring

social attractiveness loading on both of these factors. The factor structure for the clinical sample was more consistent with theoretical predictions, where social rank, group fit, and attractiveness all emerged as separate factors. For the student sample, all inter-item correlations were positive and significant, suggesting that different domains of social comparison are differentially related. As well, the distributions of scores for each of the 11 items were examined for skewness and found to be satisfactory.

In both student and clinical samples, internal consistency was found to be good, with Cronbach's alphas of .91 and .88, respectively. In general, the size of correlations between the SCRS and the SCL-90-R (a measure of psychological disturbance) was found to be greater in the clinical sample compared to the student group, which appears to be consistent with theoretical and clinical observations regarding the association between upward social comparisons and a variety of psychological difficulties. This finding may offer some support for the construct validity of the SCRS.

The SCRS was used in the present study to measure the dependent variable of perceived social status. For the purposes of this study, there was a slight modification to the instructions as well as to the initial sentence that respondents are asked to complete. Rather than asking respondents to rate themselves in comparison to "others", they were asked to compare themselves to others of the dominant culture in which they reside. Thus, for the Vancouver sample, participants were asked to compare themselves to "people of mainstream Canadian culture". For the Korean and Chinese overseas samples, participants were asked to rate themselves "in comparison to most other Korean people" and "in comparison to most other Chinese people", respectively. This slight modification to the instructions was considered necessary in order to control for the reference group on which respondents' ratings were based

(Heine, Lehman, Peng, & Greenholtz, 2002). The modification to the measure was piloted on

several colleagues in order to assess clarity and understanding of what was being asked.

Submissive Behavior Scale (Gilbert & Allan, 1994). The Submissive Behavior Scale

(referred to as the SBS in the current study) is a 16-item self-report measure developed from the

work of Buss and Craik (1986) in which descriptions of typical submissive behaviours were

generated from students. Hence, all items on the SBS focus on social behaviours. The SBS was

included in the present study as an additional measure of perceived social status that assesses

social behaviours associated with judgments of low social status. Respondents are asked to

consider a series of statements describing behaviours in social situations and to rate the degree

the statements are true of them on 5-point Likert-type scales, with anchors from 0 = "Never" to 4

= "Always". Sample items from the SBS are: *I agree that I am wrong even though I know I'm*

not; I let others criticize me or put me down without defending myself; If I try to speak and

others continue, I shut up; I don't like people to look straight at me when they are talking; I

avoid starting conversations at social gatherings. Higher scores indicate greater levels of

submissive behaviours, while lower scores indicate lower levels of submissiveness.

In a student sample, the SBS demonstrated good internal consistency (Cronbach's alpha

of .89), as well as good test-retest reliability at four months (r = .84) (Gilbert, Allan, & Trent,

1995). As predicted by ranking theory, two factors on the Sociotropy subscale of the Sociotropy-

Autonomy Personality Scale (SAS), fear of disapproval and need to please others, were

significantly correlated with submissive behaviour for college students (rs = .56 and .57,

respectively) and depressed patients (rs = .62 and .40, respectively), which provides support for

the convergent validity of the SBS (Gilbert et al., 1995). As well, the SBS has shown evidence of

discriminant validity in not being significantly correlated with the SAS Autonomy factors of

individuality, mobility/freedom from control by others, or preference for solitude in both

students and depressed patients (Gilbert et al., 1995). Consistent with ranking theory, significant

correlations were found between scores on the Submissive Behavior Scale and negative social

comparison on the earlier version of the Social Comparison Rating Scale for students ($r = -.50$)

and depressed patients ($r = -.47$), which offers some support for the construct validity of the

measure (Gilbert et al., 1995).

Social Experiences Scale (SES). The SES is a self-report measure that was developed for

the current study that assesses a respondent's appraisal of social anxiety symptoms (see previous

'Measurement Development' section for details on the development of the scale). In particular, it

was designed to evaluate whether the cultural context of a social setting influences East Asian-

heritage individuals' appraisals of social anxiety symptoms. Thus, the instructions for this

measure included a cultural prime, in which EAH respondents were asked to think about the

vignettes as taking place in either a "Canadian social setting" or an "Asian social setting". All

Euro individuals were asked to consider the vignettes as taking place in a "Canadian social

setting", while the instructions administered to the overseas East Asian groups did not include a

cultural prime given the unicultural nature of their societies. The instructions also asked

respondents to imagine the target person in each vignette to be of similar ethnicity to their own,

and that the person is in a setting that he/she is familiar with (i.e., that language is not a problem

for them) in order to control for the possibility that respondents perceived the target individuals

as being socially anxious due to language problems or unfamiliarity with the cultural standards

or norms of the setting. The SES consists of four brief vignettes, each describing a target

individual in a certain social interactional situation (i.e., a friend's wedding, an evening work

function, a party at the home of an acquaintance, and a lunch with co-workers). For each

vignette, respondents are asked to rate what they would think of the target person if he/she were to experience various symptoms of social anxiety (e.g., difficulty making eye contact with others; difficulty stating opinions to others). There are ten different symptoms of social anxiety listed for each vignette; thus, the scale consists of a total of 40 items. Responses for each item are rated on a 5-point Likert-type scale, ranging from 0 = "There's nothing wrong with what he/she is feeling/experiencing; it seems normal to me" to 5 = "There's a problem with what he/she is feeling/experiencing; it seems strange to me". Thus, higher ratings are indicative of more negative appraisals of social anxiety symptoms. The final version of the SES (with the version employing the Canadian cultural prime) is presented in Appendix A.

As the psychometric properties of the SES were unknown, item-level analyses as well as reliability analyses were conducted for all groups. Visual inspection of individual item distributions showed that all items of the SES had adequate response variability (i.e., no floor or ceiling effects) across all cultural groups. As well, all item-total correlations exceeded .30 (rs ranging from .52 to .82), and were similar in range across groups. The SES showed excellent internal consistency coefficients, with alphas ranging from .96 to .98 across all groups. With respect to initial psychometric data on the construct validity of the SES, a significant correlation was found between the SES and the Personal Norm scale of the RSBQ-M ($r = .17$). While this might indicate some initial support for the convergent validity of the SES, this interpretation should be tempered by the possibility that such a correlation of relatively low magnitude became significant as a result of the study's large sample size. Further psychometric data on the SES was obtained through a series of exploratory factor analyses to examine the factor structure of the measure across cultural groups. The results of these analyses are provided under the heading "Cross-Cultural Equivalency" under the Results section.

Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977). The CES-D is a widely used self-report measure of depressive symptomatology. The scale contains 20 items, rated according to the frequency that symptoms are experienced in the past week. Scores may range from 0 to 60, with a score of 0 indicating no depressive symptoms, and a score of 60 indicative of a severe level of depression. The CES-D has shown good internal consistency across a variety of samples. Radloff (1977) reported coefficient alphas of .90 or above for both community and clinical samples. Okazaki (2000) reported Cronbach's alphas of .90 and .79 for European Americans and Asian Americans, respectively. Within a Chinese American sample, Ying (1988) reported an alpha coefficient of .77. One-month test-retest reliability of the CES-D has been found to be .77 (Ying, Tsai, Yeh, & Huang, 2000). The CES-D was included to further explore the *cultural discrepancy hypothesis* by examining whether the experience of discrepancy between one's heritage culture and/or ethnic status and the mainstream culture was related specifically to social anxiety, or more broadly to additional psychological correlates of acculturative or bicultural stress, including higher levels of depression.

Social Avoidance and Distress Scale (SADS; Watson & Friend, 1969). The SAD scale is a 28-item self-report measure that is widely used to assess distress and behavioural avoidance related to interpersonal situations. This scale was chosen to measure social anxiety in the current study since many previous studies demonstrating Asian-Western differences in social anxiety employed the SAD, with effect sizes ranging from approximately 0.4 to 0.9. Of the 28 items of the SAD scale, 14 assess social avoidance, and the other 14 assess fear of social situations. Respondents are instructed to circle true or false in response to items. Examples of SAD scale items include: *I try to avoid situations which force me to be very sociable; I try to avoid talking to people unless I know them really well; I often want to get away from people; I often feel*

nervous or tense in casual get-togethers in which both sexes are present; I often think up excuses

in order to avoid social engagements.

Initial validation of the SAD scale was conducted in college samples (Heimberg, 1988; Watson & Friend, 1969). One-month test-retest reliability was found to be .68 (Watson & Friend, 1969). With respect to construct validity, the SAD was found to correlate significantly with scores on the SIAS ($r = .76$), but not on the SPS ($r = .28$) (Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992), which provides convergent and discriminant evidence of the SAD scale's assessment of social interactional fears. Furthermore, significant correlations were found between SAD scores and personal diary ratings of general social distress ($r = .47$), but not distress from disturbing thoughts ($r = .08$; Beidel, Turner, Stanley, & Dancu, 1989). Finally, SAD scores were significantly correlated with global ratings of social skills by familiar peers ($r = -.70$), and behavioural measures of social skills, including speech latency ($r = .48$) and number of words spoken ($r = -.31$; Arkowitz, Lichtenstein, McGovern, & Hines, 1975). Although a factor analysis of the SADS has identified a subscale structure for avoidance and distress, there has been no systematic evidence for the validity of these subscales, and most research using the SADS has employed the full-scale version (Okazaki, 1997). While data on cross-cultural samples are limited, Hong and Woody (2007) found Cronbach's alphas of .94 and .85 in European-Canadians and Korean immigrants, respectively.

Social Phobia and Anxiety Inventory (SPAI; Turner, Beidel, Dancu, & Stanley, 1989).
The SPAI is a 45-item self-report measure developed specifically to assess social phobia and agoraphobia, as defined by the DSM-III and its subsequent versions. The SPAI was also selected for this study to measure levels of social anxiety given that many previous studies showing Asian-Western differences in social anxiety utilized the SPAI, with effect sizes ranging from

approximately 0.6 to 0.8. The Social Phobia subscale (SPAI-sp) is comprised of 32 items, and the Agoraphobia subscale (SPAI-Ago) consists of 13 items. The SPAI-sp assesses the frequency of somatic and cognitive symptoms of social phobia as well as associated feelings of anxiety in a range of social contexts and with different stimulus persons (e.g., strangers, authority figures). The SPAI-sp also measures the frequency of avoidance and escape behaviours related to social phobia. Sample items on the SPAI-sp include: *I feel anxious when in a large gathering with strangers; Before entering a social situation I think about all the things that can go wrong. The types of thoughts I experience are: I will probably make a mistake and look foolish; My voice leaves me or changes when I am talking in a social situation; I attempt to avoid social situations where there are authority figures.*

The SPAI (Ago) was designed to differentiate between individuals whose social avoidance is due to fears of having a panic attack, rather than to fears of negative evaluation in social situations. The 13-item SPAI (Ago) score is subtracted from the 32-item SPAI-sp subscale score to obtain a Difference subscale (SPAI-Diff) score. For the present study, only the SPAI-sp score was obtained given that the SPAI-Diff score has shown little advantage in its ability to tap social concerns when compared to the 32-item SPAI-sp alone. In fact, correlations between scores on the SPAI-sp and SPAI-Diff typically exceed $r = .90$ (Osman et al., 1996).

The SPAI was found to have a two-week test-retest reliability coefficient of .86 in a college sample (Turner et al., 1989). With respect to internal consistency, Cronbach's alpha coefficients for the SPAI-sp and SPAI-Ago subscales were reported to be .96 and .85, respectively. In addition, the SPAI has been shown to demonstrate sensitivity and specificity in distinguishing those with social phobia from nonsocial phobia individuals. With respect to construct validity, significant positive correlations have been reported between the SPAI-sp and

other measures of social anxiety, such as the Fear of Negative Evaluation scale ($r = .60$), the Social Avoidance and Distress Scale ($r = .73$), Interaction Anxiousness scale ($r = .79$), the Fear Questionnaire-Social Anxiety ($r = .65$), and subjective units of distress (SUDS) ratings during an impromptu speech ($r = .61$) (Herbert, Bellack, & Hope, 1991). Similarly, good construct validity has been demonstrated with the Social Interaction and Anxiety Scale and the Social Phobia Scale (rs = .85 and .72, respectively). Thus, there is evidence to support the construct validity of the SPAI-sp. In terms of discriminant validity, both the SPAI-sp and SPAI-Diff subscales have been found to have low correlations with measures of trait anxiety, depression, and agoraphobia (Herbert et al., 1991). In terms of normative data for the SPAI, Turner et al. (1989) identified an optimal cut-off score of 60 for excluding university students without a diagnosis of social phobia. Among a clinical sample, a cut-off score of 80 on the SPAI appeared optimal in discriminating between those with a diagnosis of social phobia and those with other anxiety disorders.

With respect to psychometric data in cross-cultural samples, Okazaki (2002) reported Cronbach's alpha coefficients for the SPAI-sp and SPAI-Ago subscales of .98 and .88, respectively, in Asian Americans, and .99 and .88, respectively, in White Americans. Similarly, Hong and Woody (2007) found alpha coefficients for the SPAI-sp subscale to be .97 for both European-Canadians and Korean immigrants.

For the measures in this study that were modified and/or administered differentially across cultural groups, Table 3 outlines the specific version administered to each cultural group. Internal consistencies for study measures by cultural group are shown in Table 4. Finally, intercorrelations between measures for the entire study sample are presented in Table 5.

Translation of Measures

The back-translation method (Brislin, 1970) was employed to translate measures that were unavailable in Chinese and Korean language versions. For each language version, independent translators fluent in both English and Chinese/Korean translated the measures to Chinese/Korean, and subsequently back-translated the measures to English. Thus, there were two Chinese translators and two Korean translators. All translators were blind to the study hypotheses. The original English versions and back-translated versions were then compared. The primary investigator met with all translators to resolve translation discrepancies through deliberation and consensus. Corresponding changes were then made to the Chinese-/Korean-translated versions.

With respect to the Chinese-translated measures, there were two versions employed in this study that comprised either traditional Chinese characters or simplified Chinese characters, representing the two standard sets of printed Chinese characters of the contemporary Chinese written language. Simplified character forms were promoted for use in printing by the government of the People's Republic of China since the 1950's as an attempt to increase literacy. In general, simplified characters were produced by decreasing the number of strokes and replacing more complex traditional Chinese characters with simpler forms. As well, many Chinese characters have not been simplified, and thus the traditional and simplified forms are identical. Currently, traditional Chinese characters are used in Taiwan, Hong Kong, and Macau, while simplified Chinese characters are employed in Mainland China, Singapore, and Malaysia. In overseas Chinese communities (i.e., such as those in North America), traditional characters are most commonly used (Kwan-Terry & Luke, 1997). Accordingly, the measures in this study were translated into traditional Chinese characters for the Vancouver sample, while the sample in

China received a simplified Chinese translation of the measures. In this regard, the back-translation procedure was carried out on the traditional Chinese-translated measures, after which the traditional characters were changed to simplified characters using the translation tool in Microsoft Word to produce the simplified Chinese language version.

Procedure

Vancouver. The study was advertised on the University of British Columbia Human Subjects Pool website as well as through posters displayed throughout the Psychology Department, which offered one course credit for participation. The study was also advertised through postings distributed throughout UBC campus, as well as on Craigslist, offering $10 for participation. Interested individuals were asked to either sign up for the study on the Human Subjects Pool website, or contact the co-investigator of the study. Potential participants were then contacted and asked initial screening questions related to their cultural background, and whether they preferred to respond to the questionnaire in English, Chinese, or Korean.

Participants were then e-mailed a link to one of seven versions of the online survey that pertained to: their cultural background (i.e., EAH versus Euro), the language of their preference (i.e., English, Chinese, or Korean), and random assignment of individuals within the EAH group to receive one of two different versions of the Social Experiences Scale (i.e., either the Asian cultural prime or the Western cultural prime). Clicking on the provided online link directed participants to the study consent form which was in the form of a cover letter. The consent form provided a description of the purpose of the study, study procedures, including the online administration of the questionnaire battery, the approximate length of time to complete the battery, as well as remuneration. In addition, participants were informed of the voluntary and confidential nature of the study. It was also noted at the start of the questionnaire that

participants would be asked to enter a code word at the end of the survey which they would need to present in order to receive their remuneration during the face-to-face debriefing session. This was done to increase the likelihood that participants would complete the questionnaire battery. Following the consent form, participants were presented with the online questionnaire battery. After completion of the questionnaires, participants were directed to the debriefing form, and then asked to enter their personal code word. They were asked to contact the co-investigator of the study when they completed the online survey to schedule a time to come into the laboratory for the debriefing session.

Korea and China. Students from Seoul National University and Hunan Normal University were recruited by advertising the study during class time. Paper-and-pencil questionnaire packages that had been translated into Korean or Chinese were distributed to interested individuals in class, and students were given the option to either complete the questionnaire during designated class time, or on a take-home basis. The cover letter of the questionnaire package served as the consent form which provided a description of the purpose of the study, study procedures, as well as remuneration. In addition, participants were informed of the voluntary and confidential nature of the study. Participants received one course credit for their participation. A copy of the certificate of approval from the UBC Research Ethics Board is shown in Appendix B.

Results

The data were examined for univariate outliers in each group, defined as values greater than three standard deviations above or below the mean. Outlying scores on all dependent variables ($n = 13$, or 0.3% of all data points) were changed to one unit above (or below) the next highest (or lowest) value in the dataset (Tabachnick & Fidell, 2001). An examination of all dependent variables revealed two multivariate outliers in the overseas Korean group, which were retained in the dataset.[1] All analyses reported below employed an alpha level of 0.05 as the criterion of significance.

Preliminary Analyses

Demographics

Table 2 presents the characteristics of the five study samples with respect to gender composition, age, and parental education. Chi-square analyses for gender revealed significant differences between the five cultural groups, $\chi^2(4, N = 692) = 101.00, p < .0001$. The Vancouver groups (i.e., Euro, 1st-generation EAH, and 2nd-generation EAH) were comprised of more females compared to males, while the overseas EA groups had higher male to female ratios. Two-way (group x gender) analyses of variance were conducted on each of the dependent variables to examine the effect of gender and whether there was an interaction effect between cultural group and gender. The results of these analyses are presented in Table 6. As shown, a small but significant effect was found for gender on the dependent variables Personal Norm, negative assertion social self-efficacy, and social anxiety as measured by the SPAI. Females scored higher on the Personal Norms scale and the SPAI, while males scored higher on negative assertion social self-efficacy. No significant effect for gender emerged for all remaining

dependent variables. Furthermore, there were no significant interaction effects between cultural group and gender across all dependent variables.

One-way (group) analysis of variance also revealed significant differences in age among the five groups, $F(4, 691) = 33.90$, $p < .0001$, partial $\eta^2 = .17$.[2] Tukey HSD tests indicated that the Euro group was significantly older than all other groups ($p < .01$ for all comparisons), while the overseas Chinese group was significantly younger than all other groups ($p < .05$ for all comparisons). The overseas Korean, 1st-generation EAH, and 2nd-generation EAH groups fell in-between, with the overseas Korean group being significantly older than the 2nd-generation EAH group ($p < .0001$). The 1st-generation EAH group did not differ significantly from either the overseas Korean or the 2nd-generation groups ($p > .05$ for both comparisons). It is likely that these age differences across groups are due to the restricted age criteria (i.e., between 17-30 years) for the study, resulting in small standard deviation values. As the pattern of results and strength of the effects remained largely unchanged when gender and age were added as covariates in subsequent between-group analyses of variance conducted on each of the dependent variables (see details under 'Main Analyses'), the ensuing results are presented without taking gender and age into account.

In terms of parental education, it can be seen from Table 2 that the Euro, 1st-generation EAH, 2nd-generation EAH, and Korean groups had similar distributions across educational levels for both parents, in which the highest proportion of parents had a university degree, while the lowest had some high school or less. Of these groups, overseas Korean participants had the highest proportion of parents with university degrees, followed closely by the Euro group. Interestingly, the overseas Chinese group showed the opposite pattern to all other groups,

wherein the highest proportion of both parents had some high school or less, while the lowest proportion of parents had a university degree.

Cross-Cultural Equivalence

Prior to comparing scores in cross-cultural survey research, it is important to establish that the meaning of a given measurement scale is similar or equivalent across cultural groups (Berry, Poortinga, Segall, & Dasen, 1992; van de Vijver & Leung, 1997). Thus, item-total correlations as well as overall reliability coefficients for the main dependent measures (i.e., sociocontextual and social anxiety variables) were examined within, and compared across cultures. Table 4 presents the internal consistency coefficients for dependent measures across groups. To further establish cross-cultural equivalence, the structural equivalence of the main dependent measures was tested using exploratory factor analysis. A principal axis factor analysis with direct oblimin oblique rotation was carried out for each of the main dependent measures: a) Reactions to Social Behaviour Questionnaire-Modified (RSBQ-M); b) Interpersonal Competence Questionnaire-Revised (ICQ-R); c) Social Comparison Rating Scale (SCRS); d) Submissive Behaviour Scale (SBS); e) Social Phobia and Anxiety Inventory (SPAI); and f) Social Avoidance and Distress Scale (SADS), and computed separately for each of the five cultural groups. As well, an exploratory factor analysis was conducted for the newly developed Social Experiences Scale (SES) to provide initial psychometric data.

RSBQ-M. For the 17 items of the RSBQ-M Personal Norm scale, all cultural groups showed adequate reliability coefficients ranging from .76 to .80. The 17 items of the RSBQ-M Cultural Norm scale also showed adequate reliability coefficients across groups, ranging from .65 to .76. Item-total correlations were similar in range across the five groups for both the Personal Norm scale (*r*s ranging from .20 to .67) and the Cultural Norm scale (*r*s ranging from

.15 to .61). Only two item-total correlations in the Cultural Norm scale did not reach significance (item 10 in the Euro sample and item 14 in the 2nd-generation EAH sample). These results indicated that the two subscales of the RSBQ-M were sufficiently reliable across cultural groups.

For the Personal Norm scale, the Kaiser-Meyer-Olkin index of sampling adequacy ranged from .67 to .87 across all cultural groups, indicating that the correlation matrices across groups were suitable for factor analysis (Tabachnick & Fidell, 2007). Extracting factors with eigenvalues greater than one based on the Kaiser criterion produced various models across groups, ranging from three-factor to six-factor solutions. These various models accounted for between 39% to 53% of the total variance across groups. Examination of the factor composition after direct oblimin rotation indicated that only two factors (for the 1st- and 2nd-generation EAH groups), and three factors (for the Euro, overseas Korean, and overseas Chinese groups) yielded at least three items with loadings of .4 or greater. It has been recommended as a criterion for factor extraction that factors have at least three salient (i.e., .40), interpretable loadings (Garson, 2006; Telch et al., 2004). Visual inspection of scree plots was also consistent with the latter findings.

Thus, factor analysis on the 17 items of the Personal Norm scale was rerun specifying two and three factors across all groups. A three-factor solution accounted for 30% to 50% of the total variance across all groups, while a two-factor solution accounted for 26% to 45% of the total variance across groups. For both the 1st- and 2nd-generation EAH samples, Factor 3 in the three-factor solution had only one factor loading of .4 or greater. In the two-factor solution, however, items loaded precisely onto separate factors representing either *attention-seeking* behaviours or *attention-avoiding* behaviours as designated by the authors of the RSBQ-M. For the Euro, overseas Korean, and overseas Chinese samples, factor compositions for the three-

factor solution were similar across groups. With respect to the two-factor solution in these latter groups, items generally loaded onto two separate factors consistent with the *attention-seeking* and *attention-avoiding* items of the RSBQ-M, similar to the 1st- and 2nd-generation EAH samples.

Thus, these findings point to a similar two-factor structure of the Personal Norm scale across the five cultural groups. Although current use of the RSBQ-M has assumed a unidimensional scale, there has been recent consideration of the *attention-seeking* and *attention-avoiding* items as representing two separate subscales, with additional scoring procedures corresponding to these two subscales (N. Heinrichs, personal communication). Thus, interpretation of results needs to bear in mind the possibility of a two-factor solution in the Personal Norm scale, and possibly a three-factor structure for the Euro and two overseas East Asian groups.

With respect to factor analysis of the Cultural Norm scale of the RSBQ-M, the Kaiser-Meyer-Olkin index of sampling adequacy ranged from .61 to .76 across all cultural groups, indicating that the data were acceptable for factor analysis. Extracting factors with eigenvalues greater than one based on the Kaiser criterion produced various factor solutions across groups, ranging from three-factor to six-factor solutions. These various models accounted for between 39% to 53% of the total variance across groups. Direct oblimin rotation indicated that in all of the cultural groups, only three factors were well-defined (i.e., had loadings of .4 or higher on at least three items).

Given these findings as well as the theoretical basis of a possible two-factor structure representing *attention-seeking* and *attention-avoiding* behaviours, factor analysis on the 17 items of the Cultural Norm scale was rerun specifying three and two factors for all groups. The three-

factor solution accounted for 33% to 41% of the total variance across all groups, while the two-factor solution accounted for 26% to 32% of the total variance across groups. With respect to the three-factor solution, there appeared to be a stable pattern across all cultural groups in which items 4, 5, 8, 12, 13, and 15 consistently loaded onto the same factor. The other two factors in the three-factor solution were less consistent across groups, but showed generally similar item loading patterns. With regard to the two-factor solution, items loaded consistently onto factors representing *attention-seeking* and *attention-avoiding* behaviours for the Euro, 1st-generation EAH, and 2nd-generation EAH groups. For the two overseas EA groups, items did not load as consistently onto these two factors, but did show a fairly similar item loading pattern. Thus, although the current use of the Cultural Norm scale assumes a unidimensional structure, it is possible that either a two- or three-factor structure of the scale is valid for cross-cultural comparison, with a two-factor solution fitting more with its theoretical basis.

ICQ-R. The ICQ-R showed good internal consistency for all three subscales in each of the five cultural groups. Alphas ranged from .84 to .89 for the Initiation subscale, .82 to .91 for the Negative Assertion subscale, and .77 to .88 for the Disclosure subscale. All item-total correlations exceeded .30, and the range of item-total correlations for each of the three ICQ-R subscales was relatively similar across the cultural groups (*r*s ranging from .42 to .85).

With respect to the exploratory factor analysis of the ICQ-R, extracting factors with eigenvalues greater than one based on the Kaiser criterion produced various models across groups, ranging from four-factor to eight-factor solutions. These various models accounted for between 48% to 58% of the total variance across groups. The Kaiser-Meyer-Olkin index of sampling adequacy ranged from .77 to .90 across all cultural groups. Direct oblimin rotation

indicated that in all of the cultural groups, there were less than 3 items with loadings of .4 or higher for factors beyond Factor 3.

Given that a three-factor structure was consistent with theoretical predictions and previous psychometric research, and that visual inspection of the scree plot appeared to yield a three-factor solution for all groups, factor analysis on the 24 items of the ICQ-R was rerun specifying three factors. The three-factor solution accounted for 31% to 49% of the total variance across all groups. In general, items loading on the three factors were consistent with the Initiation, Negative Assertion, and Disclosure subscales for all groups except for the overseas Chinese sample. In the latter group, the majority of items on the Initiation and Negative Assertion subscales loaded consistently onto separate factors; however, items of the Disclosure scale did not consistently load onto one factor. While these findings generally point to a similar three-factor structure of the ICQ-R across groups and thus the use of three subscales for cross-cultural comparison in this study, interpretation of results concerning the Disclosure subscale should bear in mind the potential for differences in meaning for the overseas Chinese sample.

SBS. The SBS had acceptable internal consistency coefficients, with alphas ranging from .74 to .84 across the five cultural groups. Item-total correlations for the 16 items of the SBS were found to be similar in range across groups (*r*s ranging from .26 to .73).

The exploratory factor analysis of the 16 items of the SBS extracted either four factors (for the Euro and 1st-generation EAH groups), or five factors (for the 2nd-generation EAH, and the two overseas EA groups) using Kaiser criterion that accounted for 39% to 42% and 39% to 51% of the total variance, respectively. Across the five groups, the Kaiser-Meyer-Olkin index of sampling adequacy ranged from .71 to .82. Direct oblimin rotation indicated that the majority of items in each of the cultural groups loaded onto the first two factors. Furthermore, inspection of

scree plots appeared to yield a two-factor solution for all groups. Thus, factor analysis of the SBS was rerun specifying two factors. In general, items loaded similarly on the two factors for the Euro, 2nd-generation EAH, and 1st-generation EAH groups. For the two overseas EA samples, item loading patterns for the two-factor structure showed some discrepancies with those of the latter groups, although a somewhat stable pattern was found across all groups in which items 10, 11, 13, 14, and 15 consistently loaded onto the same factor.

Based on these findings, the two-factor solution could be interpreted as being relatively stable between the Vancouver and overseas EA samples; however, given the presence of discrepancies for the two-factor solution and the fact that previous research has assumed a unifactorial structure for the SBS, a one-factor solution was likely to demonstrate more equivalence across groups. Thus, the factor analysis was rerun specifying one factor. Item loadings tended to be above .30 across all groups, with the exception of several of the items in the overseas Chinese sample. These findings generally support the use of a one-factor solution for cross-cultural comparison in this study, and demonstrate that the SBS has relatively similar factorial structures across cultural groups.

SCRS. The SCRS showed good internal consistency coefficients, with alphas ranging from .86 to .91 across all groups. In general, the range of item-total correlations was largely similar across groups. All item-total correlations exceeded .30, with the exception of just one item (item 5) from the overseas Korean sample.

With respect to the factor analysis, the Kaiser-Meyer-Olkin index of sampling adequacy was between .80 to .91 across the five cultural groups. Across all groups, extracting factors with eigenvalues greater than one based on the Kaiser criterion produced a two-factor solution that accounted for 48% to 61% of the total variance. Direct oblimin rotation indicated that the

majority of the 11 items of the SCRS loaded onto Factor 1, while the remaining items 4 (*left out-accepted*), 5 (*different-same*), and 11 (*an outsider-an insider*) (for Euro and 1st-generation EAH groups) or 5 and 11 (for 2nd-generation EAH and overseas Korean groups) loaded on Factor 2. These factor structures were somewhat consistent with theoretical predictions, given that the solutions indicate two factors related to social rank (Factor 1) and social group fit (Factor 2). For the overseas Chinese sample, items 2 (*incompetent-more competent)*, 3 (*unlikeable-more likeable)*, and 4 *(left out-accepted)* loaded onto Factor 2.

Given that visual inspection of the scree plot appeared to yield a one-factor solution for all groups, factor analysis on the 11 items was rerun specifying one factor. The one-factor solution accounted for 41% to 54% of the total variance across groups. Across the five groups, all items except for item 5 showed factor loadings of .40 or greater on the one factor. Thus, these results indicate that the SCRS has largely the same structure across the five cultural groups, and is suitable for cross-cultural comparison. Findings from the factor analysis as well as previous use of the SCRS as a unifactorial measure indicate the appropriateness of using the SCRS as a one-factor measure for cross-cultural comparison in the present study. Future research may be warranted, however, to investigate the possibility of a two-factor structure of the SCRS as predicted by theory.

SPAI. The SPAI demonstrated excellent reliability coefficients across groups, with alphas ranging from .98 to .99. The range of item-total correlations was largely similar across groups, and all item-total correlations exceeded .30, with the exception of two items (one from the Euro sample, and one from the overseas Chinese sample).

Factor analysis of the SPAI 32-item social phobia subscale (SPAI-sp) revealed Kaiser-Meyer-Olkin indices of sampling adequacy that ranged from .92 to .94 across the five cultural

groups. Extracting factors with eigenvalues greater than one based on the Kaiser criterion produced either five-factor solutions (for the Euro, 2nd-generation EAH, and overseas Korean groups), or six-factor solutions (for the 1st-generation EAH and overseas Chinese groups) that accounted for 63% to 67% and 62% to 66% of the total variance, respectively. Direct oblimin rotation revealed four well-defined factors for each of the Vancouver samples, and three and five well-defined factors for the overseas Korean and Chinese groups, respectively. The factor analysis was rerun, specifying four-, three-, two-, and one-factor structures. The analyses revealed that the single-factor structure was the only one to show consistent item loadings above .4 across all cultural groups (with the exception of one item in the Euro group and one item in the overseas Chinese group). Furthermore, inspection of scree plots appeared to yield a single-factor solution for all groups. These findings are consistent with research assuming a unifactorial structure of the SPAI-sp, and support the use of a one-factor solution for cross-cultural comparison of the SPAI-sp in this study.

SADS. The SADS demonstrated excellent internal consistency coefficients, ranging from .89 to .95 across the five cultural groups. Item-total correlations showed relatively similar ranges across groups, and all correlations exceeded .30 with the exception of item 19 in the overseas Korean group, and item 4 in the overseas Chinese group.

Factor analysis of the 28 items of the SADS extracted either six factors (for the Euro group), seven factors (for the 1st-generation EAH and overseas Korean groups) or eight factors (for the 2nd-generation EAH and overseas Chinese groups) using Kaiser criterion. Across the five groups, the Kaiser-Meyer-Olkin index of sampling adequacy ranged from .79 to .91. Direct oblimin rotation indicated that across all cultural groups, only three factors were well-defined

(i.e., had loadings of .4 or higher on at least three items). Thus, factor analysis of the 28 items of the SADS was rerun specifying three-, two-, and single-factor models for all groups.

The three-factor solution accounted for 33% to 47% of the total variance across the five groups. When three factors were extracted, only the Euro, 1st-generation EAH, and overseas Korean groups had three well-defined factors, while the 2nd-generation EAH and overseas Chinese groups had two well-defined factors. Inspection of factor loadings did not reveal a clear pattern that mapped onto theoretically meaningful constructs. When two factors were extracted, all groups showed a general pattern in which one factor consisted largely of items representing *fear* of social situations, while the second factor comprised mostly items representing *avoidance* of social situations. The two-factor solution accounted for 28% to 44% of the total variance across groups. The two-factor structure appeared to provide more well-defined factors (i.e., a greater number of factor loadings of .40 or higher) compared to the three-factor solution for the Euro, 2nd-generation EAH, 1st-generation EAH, and overseas Chinese groups. However, the three-factor solution appeared to provide more well-defined factors compared to the two-factor solution for the overseas Korean group.

When one factor was extracted, the proportion of the total variance accounted for ranged from 24% to 40% across groups. Item loadings in the single-factor solution tended to be above .30 across all groups, with the exception of several of the items in the overseas Korean sample. These findings generally support a unifactorial structure of the SADS for cross-cultural comparison across the Vancouver samples and overseas Chinese group. For the overseas Korean group, the structure of the SADS appeared to be most consistent with either a three-factor or single-factor solution. Thus, interpretation of results should bear in mind this potential discrepancy in the structure of the SADS between the overseas Korean sample and other groups.

SES. Because the psychometric properties of the SES were unknown, a series of exploratory factor analyses were carried out to provide initial data concerning its factor structure, as well as permitting the examination of its cross-cultural equivalence. As noted earlier, all items of the SES had adequate response variability, adequate item-total correlations, and excellent reliability coefficients across groups (*r*s ranged from .96 to .98). Thus, all 40 items of the SES were retained for further analysis.

A principal axis factor analysis with direct oblimin oblique rotation was conducted on the SES for each group. As a conservative criterion for factor extraction, the number of factors to be retained was taken as the lowest number of factors consistent across both the Kaiser criterion and the scree method, while also taking into account simple structure (i.e., absence of items with salient loadings on more than one factor) (Telch et al., 2004). The Kaiser-Meyer-Olkin index of sampling adequacy ranged from .89 to .92 across cultural groups, indicating that the data were appropriate for factor analysis. Across the five groups, extracting factors with eigenvalues greater than one produced either six factors (in the 2nd-generation EAH group), seven factors (in the Euro, 1st-generation EAH, and overseas Chinese groups), or eight factors (in the overseas Korean sample). Visual inspection of scree plots yielded one factor (in the 2nd-generation EAH group), two factors (in the overseas Chinese sample), or three factors (in the Euro, 1st-generation EAH, and overseas Korean groups). Although the number of factors to retain was based on the lowest number of factors consistent across both the Kaiser criterion and the scree method in each of the cultural groups, for comparative purposes, three-, two-, and one-factor solutions were examined across all groups.

For the three-factor solution, the 1st-generation EAH, 2nd-generation EAH, and overseas Chinese groups had a third factor in which there was less than three items with salient factor

loadings. In the Euro group, although all factors had at least three items with salient factor loadings, there were four complex items (i.e., loading on more than one factor). In the overseas Korean sample, all three factors had three or more items with salient factor loadings, and the solution had a simple structure. For all groups with the exception of the Euro sample, one of the factors in the three-factor solution comprised all items from the last vignette of the SES scale (i.e., items D1-D10). The three-factor solution accounted for 51% to 64% of the total variance across groups.

The two-factor solution appeared to be superior to the three-factor solution in the 1st-generation EAH, 2nd-generation EAH, and overseas Chinese groups in terms of having at least three items with salient factor loadings across the two factors. The two-factor solution also seemed to be superior to the three-factor solution in the Euro group in terms of have a simple structure. For the overseas Korean group, the two-factor solution seemed comparable to the three-factor solution in terms of simple structure and having well-defined factors. Items D1-D10 were still well-defined to comprise a single factor for the overseas Chinese sample, but were less well-defined for the 1st-generation EAH, 2nd-generation EAH, and overseas Korean groups. The two-factor solution accounted for 45% to 59% of the total variance across groups.

For all groups, all items had salient factor loadings in the single-factor solution. Although the amount of total variance explained in the single-factor solution (ranging from 36% to 53% across groups) was lower than in the three- or two-factor solutions, the single-factor solution was similar or better than the two-factor solution in terms of salient factor loadings. Also, the one-factor solution supported the predicted use of the SES as a unifactorial measure. This assumption of a single-factor structure was based on the fact that the items of the SES were derived from established social anxiety measures that are also scored in a unifactorial manner. Since the factor

analysis findings indicate that the single-factor model showed the most equivalence across groups, it seemed appropriate to consider the SES as a unifactorial measure for cross-cultural comparison in this study.

Group Differences in Cultural Values

Self-construal. The Singelis Self-Construal Scale (SCS) was used to confirm expected group differences on levels of independent and interdependent self-construal. Table 7 presents the mean scores and standard deviations on measures of self-construal across the five cultural groups. A one-way (group) multivariate analysis of variance (MANOVA) conducted on the SCS subscales revealed a significant multivariate main effect for group, $F(8, 1372) = 14.45$, $p <$ .0001. While a significant omnibus F-test is typically followed by examining all possible pairwise comparisons, the interpretation of such comparisons would be particularly difficult here given the number of groups involved. Given that there were focused predictions about group differences on the SCS based on theory and previous work, planned contrast analyses were employed to test these predictions. Such planned contrasts allow for much greater statistical power compared to omnibus tests, and provide greater clarity of substantive interpretation of results (Rosenthal & Rosnow, 1985). While Table 7 presents pairwise comparisons of the SCS, these unplanned comparisons were presented for the purposes of data exploration and supplementing the interpretation of planned contrast results (Rosenthal & Rosnow, 1985).

Specific hypotheses with respect to the two subscales of the SCS were the following:

Independence subscale:

Euro > 2nd-generation EAH > 1st-generation EAH > Overseas EA

Interdependence subscale:

Euro < 2nd-generation EAH < 1st-generation EAH < Overseas EA

Thus, a linear trend was predicted for the SCS Independence subscale in that a greater degree of exposure to East Asian cultural values would be associated with decreasing levels of independent self-construal. An opposite linear trend was proposed for the SCS Interdependence subscale where a greater degree of exposure to East Asian cultural values would be associated with increasing levels of interdependent self-construal. The two overseas EA samples (i.e., Korea and China) were grouped together on the theoretical basis that they did not differ with respect to exposure to East Asian cultural values (Cheah & Park, 2006).

Given that linear hypotheses were proposed to describe group differences on levels of self-construal, planned comparisons involving a set of orthogonal, polynomial (i.e., involving curves or trends) contrasts were employed. When dealing with polynomial contrasts (e.g., linear, quadratic, cubic, etc.), employing a series of orthogonal contrasts helps to better understand the nature of the trend, particularly given that combinations of linear and nonlinear results are typically found (Rosenthal & Rosnow, 1985). Thus, although the specific hypotheses involved a linear contrast, planned comparisons for the SCS Independence and Interdependence subscales were run using three orthogonal polynomial contrasts, each based on a different polynomial: the linear, quadratic, and cubic. Table 8 shows the contrast weights for each of the three polynomial contrasts employed to test group differences on the SCS Independence and Interdependence subscales. As shown, the contrast weights are coded in ascending order of exposure to East Asian cultural values for the linear trend. Employing the opposite set of weights (i.e., weights multiplied by -1) would yield identical contrast sums of squares (Rosenthal & Rosnow, 1985).

With respect to the Independence subscale, contrast tests revealed a significant effect for a linear trend in the predicted direction, $t(688) = 4.07$, $p < .0001$, $r = .15$. As expected, the quadratic or cubic trends did not reveal any significant main effects, $t(688) = -.71$, $p = .48$, $r =$

.03 and $t(688) = .71$, $p = .48$, $r = .03$, respectively. Thus, planned contrast results indicated that as exposure to East Asian cultural values increased, levels of independent self-construal decreased proportionately. To supplement the understanding of this linear trend, post hoc comparisons using the Games-Howell procedure were explored (see Table 7). Given the unequal sample sizes across groups, the Games-Howell procedure was employed throughout the study to account for potential differences in variance. It has been suggested that the Games-Howell procedure provides a valid test for unequal sample sizes and variances, controls the overall risk of Type I error, and has the best statistical power among alternative multiple comparison procedures (Field, 2005; Olejnik & Lee, 1990).

Pairwise comparisons revealed that the Euro group scored significantly higher on independent self-construal compared to the overseas Korean and 1st-generation EAH groups while not differing from the 2nd-generation EAH group, which is generally consistent with the predicted linear trend. An unexpected finding, however, was that the overseas Chinese group did not differ from the Euro group on independent self-construal, and scored significantly higher than the overseas Korean group. Thus, examining the overseas groups separately revealed that overseas Chinese participants were more similar to the Euro group with respect to independent self-construal compared to their overseas Korean counterparts; hence, the lower levels of independent self-construal reported on average by overseas EA participants appeared to be largely driven by the Korean group.

Planned comparisons with respect to the Interdependence subscale showed that as predicted, a significant effect emerged for a linear trend, $t(688) = 5.38$, $p < .0001$, $r = .20$, in which levels of interdependent self-construal increased with degree of exposure to East Asian cultural values. Results showed that a quadratic trend was also found to be significant, $t(688) = -$

3.33, $p = .001$, $r = .13$, indicating a pattern of means that is curvilinear (i.e., represented by a curve with one bend). Based on the contrast weights employed for the quadratic trend (Table 8), the negative value of the t-statistic indicates a change in direction from increasing to decreasing levels of interdependent self-construal with greater exposure to East Asian cultural values (i.e., similar to an inverted U-shape).

There was no significant effect found for the cubic trend, $t(688) = -.033$, $p = .97$, $r = .00$. In further delineating this combined linear and quadratic trend, post hoc comparisons showed that group means were generally consistent with the predicted linear trend (see Table 7). As expected, Vancouver Asians reported higher levels of interdependent self-construal compared to Euro participants. However, the overseas Korean group reported significantly lower levels of interdependent self-construal compared to the overseas Chinese group, while not differing from the 1st- and 2nd-generation EAH groups. Thus, examining the overseas EA groups separately indicated that the quadratic component was influenced by the similarity of the overseas Korean group to the Vancouver East Asian samples.

Overall, planned contrast results appeared to provide some support for predicted linear trends involving self-construal across the Euro, 1st- and 2nd-generation EAH, and overseas EA groups. However, exploration of post hoc comparisons revealed some unexpected findings in that the overseas Chinese group endorsed the highest levels of independent self-construal, similar to the Euro group, and at the same time, reported the highest levels of interdependent self-construal. Furthermore, the overseas Korean and Chinese groups differed from one another on both types of self-construal.

Acculturation. Level of acculturation was measured among the Euro, and 1st- and 2nd-generation EAH groups using the Vancouver Index of Acculturation (VIA). Table 7 presents the

mean scores and standard deviations on measures of acculturation with respect to heritage and mainstream cultural values. A one-way (group) MANOVA conducted on the VIA subscales revealed a significant multivariate main effect for group, $F(4, 758) = 30.62$, $p < .0001$. Follow-up univariate analyses revealed significant between-group differences on the VIA Heritage and Mainstream subscales, $F(2, 380) = 9.83$ and 34.49, respectively, $p < .0001$ for both.

As shown in Table 7, post hoc Games-Howell tests indicated that 1st-generation EAH participants scored significantly higher than 2nd-generation EAH participants ($p = .041$) on the VIA Heritage subscale. Multiple comparisons also indicated that 1st-generation EAH participants scored significantly lower than the 2nd-generation EAH and Euro groups on the VIA Mainstream subscale ($p < .0001$ for both comparisons). Further, the 2nd-generation EAH group scored significantly lower on the VIA Mainstream subscale compared to the Euro group ($p = .02$).

These results indicated that 1st-generation EAH participants had a greater adherence to East Asian cultural values compared to their 2nd-generation EAH counterparts. As expected, 1st-generation EAH individuals were significantly less likely to endorse North American values and behaviours compared to 2nd-generation EAH and Euro individuals. Further, Euro participants were more likely to adhere to North American values and behaviours compared to their 2nd-generation EAH counterparts. These analyses generally confirm differences in acculturation levels and cultural identity between the three groups residing in North America.

Main Analyses

Ethnic Differences in Social Anxiety

East Asian-heritage and European-heritage groups were first compared with respect to levels of social anxiety in order to examine whether results were consistent with previously observed ethnic differences. As shown in Table 7, the Euro group scored significantly lower on

social anxiety as measured by the SPAI compared to 2nd-generation EAH participants, producing

an effect size of $d = 0.50$, which is a medium effect size according to Cohen (1988). The Euro

group also scored lower than the 1st-generation EAH group on the SPAI, yielding a small to

medium effect size of 0.31, although this difference did not reach significance. With respect to

the SADS measure of social anxiety, there were no significant differences between the Euro and

EAH groups; however, small to medium effect sizes were found in the predicted direction (i.e.,

Euro group scoring lower) between the Euro group and 1st- and 2nd-generation EAH participants

($d = 0.21$ and 0.28, respectively).

Thus, the findings were generally consistent with previous studies showing medium

effect sizes for ethnic differences in social anxiety. The differences in social anxiety between

Euro and EAH groups appeared to be larger on the SPAI compared to the SADS, and were larger

in magnitude for 2nd-generation EAH versus 1st-generation EAH groups.

Planned Contrasts Analyses

Given that there were specific, focused hypotheses being proposed in this study, planned

comparisons were considered most appropriate to test the two central research questions. With

planned comparisons, research hypotheses driven by theory are translated directly into statistical

hypotheses for testing. Prior to carrying out planned contrast analyses, omnibus *F*-tests were

conducted to detect whether there were in fact statistically significant group differences on

relevant dependent variables. One-way (group) ANOVAs revealed significant overall main

effects for the Personal Norm Scale, $F(4, 691) = 18.12$, $p < .0001$, partial $\eta^2 = .10$, and Cultural

Norm Scale, $F(4, 691) = 38.36$, $p < .0001$, partial $\eta^2 = .18$. Similarly, one-way (group)

MANOVA tests showed significant overall main effects for the remaining dependent variables:

the three subscales of the ICQ measuring social self-efficacy, $F(12, 1813) = 4.01$, $p < .0001$,

partial η^2 = .02, perceived social status variables measured by the SCRS and SBS, $F(8, 1372)$ =

15.35, $p < .0001$, partial η^2 = .08, and the SPAI and SADS measuring social anxiety, $F(8, 1372)$

= 12.30, $p < .0001$, partial η^2 = .07. Significant differences were also found between groups on

the CES-D measure of depression, $F(4, 691)$ = 7.18, $p < .0001$, partial η^2 = .04. Thus, overall

analysis of variance detected significant group differences on all dependent variables, providing

support for following up with planned contrast analyses.[3]

Table 7 shows the means and standard deviations for the dependent variables by cultural

group, as well as pairwise comparisons for each dependent variable. As evident from the table,

following up omnibus F-tests with an examination of all possible post hoc comparisons between

the five cultural groups would amount to much confusion and be of limited interpretive value.

Given the focused hypotheses of this study, and hence the use of specific, planned comparisons

between groups, the post hoc group comparisons shown in Table 7 are presented for the sake of

interest and for purposes of exploring the data in order to enhance interpretation of planned

contrast results. Specific predictions for the two main hypotheses to be tested in this study were

the following:

1) *Asian Socialization Hypothesis*:

    a. Euro > 2nd-generation EAH > 1st-generation EAH > Overseas EA on:

        i. Personal acceptance of attention-seeking behaviours

        ii. Cultural acceptance of attention-seeking behaviours

        iii. Social comparison (measured by the SCRS)

    b. Euro < 2nd-generation EAH < 1st-generation EAH < Overseas EA on:

        i. Submissive behaviour (measured by the SBS)

        ii. Social anxiety

2) *Cultural Discrepancy Hypothesis*:

    a. Euro & Overseas EA > 2nd-generation EAH = 1st-generation EAH on:

        i. Social self-efficacy

        ii. Social comparison

    b. Euro & Overseas EA < 2nd-generation EAH = 1st-generation EAH on:

        i. Submissive behaviour

        ii. Social anxiety

        iii. Depression

For the *Asian socialization hypothesis*, a linear trend was predicted in that personal and cultural acceptance of attention-seeking behaviours and social comparison would decrease linearly with increasing degree of exposure to East Asian cultural values. In keeping with this, submissive behaviour and social anxiety would increase linearly with increasing degree of East Asian socialization.

For the *cultural discrepancy hypothesis*, it was predicted that unicultural groups (i.e., Euro and overseas EA groups) would score higher than bicultural groups (i.e., 1st- and 2nd-generation EAH groups) on levels of social self-efficacy and social comparison. Consistent with these predictions, the unicultural groups should report lower levels of submissive behaviour and social anxiety compared to the bicultural groups. Further, in line with the notion that the experience of discrepancy between one's heritage culture and/or ethnic status and the mainstream culture is not specifically related to social anxiety, but is also associated with depression, the unicultural groups were predicted to score lower on levels of depression compared to the bicultural groups.

Two separate contrast analyses were employed to test the two rival hypotheses. Table 8 presents the planned contrast weights employed for the two main hypotheses of this study. As shown, the *Asian socialization hypothesis* was tested using a set of orthogonal contrasts as the hypothesis predicts a linear trend with respect to varying levels of exposure to East Asian cultural values. As noted earlier, it is recommended that a set of orthogonal contrasts are employed when testing for polynomial trends, given that combinations of linear and nonlinear results are typically found. Thus, planned comparison analysis for the *Asian socialization hypothesis* was run using three orthogonal polynomial contrasts: the linear, quadratic, and cubic. The planned contrast analysis for the *cultural discrepancy hypothesis* involved a non-orthogonal contrast. While the advantages of using orthogonal contrasts have been noted in that each contrast is able to test uncorrelated questions, it has been argued that contrasts should not be dictated by orthogonality, but rather by research questions of interest (Huberty & Morris, 1988). Further, non-orthogonal contrasts have been considered valuable for use in the comparison of rival hypotheses (Rosenthal & Rosnow, 1985).

Asian socialization hypothesis. For the Personal Norm scale, a measure of an individual's personal acceptance of attention-seeking social behaviours, contrast tests revealed a significant effect for a linear trend in the opposite direction to what was predicted, $t(238) = -5.80$, $p < .0001$, $r = .35$. The quadratic or cubic trend did not reveal any significant main effects, $t(369) = .70$, $p = .24$, $r = .04$ and $t(229) = -1.37$, $p = .085$, $r = .09$, respectively.

With respect to the Cultural Norm scale, a measure of one's perceived cultural acceptance of attention-seeking behaviours, contrast tests showed significant effects for a linear trend in the predicted direction, $t(201) = 7.20$, $p < .0001$, $r = .45$. Results showed that a quadratic trend was also found to be significant, $t(382) = 9.04$, $p < .0001$, $r = .42$, indicating a trend in

which there is a change in direction from decreasing to increasing cultural acceptance of attention-seeking behaviour with increasing East Asian socialization. There was no significant effect found for the cubic trend, $t(275) = .12$, $p = .45$, $r = .01$.

Further exploration of post hoc comparisons of the Cultural Norm scale using the Games-Howell procedure revealed that as expected, the Euro group reported greater cultural acceptance of attention-seeking behaviour compared to all the East Asian groups. However, there were unexpected findings with respect to the overseas EA groups. In particular, overseas Korean participants did not differ from the Vancouver East Asian groups, and overseas Chinese participants reported significantly greater cultural acceptance of attention-seeking behaviour compared to the latter East Asian groups. Overall, the findings suggest that acceptance of attention-seeking behaviour on a personal level did not decrease in a linear fashion with increasing East Asian socialization as predicted. The pattern of means for cultural acceptance of attention-seeking behaviours did not appear to reflect a clear linear trend as predicted, but was characterized by a combination of linear and quadratic components, pointing to unexpected findings in the overseas EA samples.

With respect to perceived social status variables, planned contrasts showed that significant differences did not emerge for a linear trend in the expected direction for social comparison (measured by the SCRS), but were found for the opposite direction, $t(688) = -4.84$, $p < .0001$, $r = .18$. In terms of submissive behaviour, contrast tests also did not reveal a significant effect for a linear trend, $t(688) = 1.07$, $p = .29$, $r = .04$. Thus, both perceived social status variables did not appear to be linearly related to degree of East Asian socialization in the predicted direction.

With regard to social anxiety variables, contrast tests did not show a significant effect for a linear relationship between scores on the SPAI and degree of East Asian socialization, $t(688) = -.94$, $p = .17$, $r = .04$. When planned contrasts were carried out for the SADS, a significant effect emerged for a linear trend in the predicted direction, $t(186) = 2.37$, $p = .019$, $r = .17$, suggesting that level of social anxiety increased with increasing degree of East Asian socialization. No significant effects emerged for the quadratic or cubic trends on the SADS, $t(328) = -.97$, $p = .33$, $r = .05$ and $t(215) = 1.46$, $p = .15$, $r = .10$, respectively. An examination of post hoc comparisons, however, showed that a linear trend for the SADS did not bear out across the five cultural groups. Specifically, inspection of the two overseas EA groups revealed that the Korean group scored significantly higher on the SADS compared to the Chinese group, and that the Chinese and Euro groups scored the lowest on the SADS compared to all other groups and did not differ from one another. Thus, the observed linear trend appeared to be largely accounted for by the higher levels of social anxiety on the SADS reported by the Korean group.

In summary, the results of the above planned contrast analyses demonstrated statistically meaningful linear trends in that cultural acceptance of attention-seeking behaviour and social anxiety, as measured by the SADS, were associated with exposure to East Asian cultural values, as predicted by the *Asian socialization hypothesis*. However, post hoc comparisons revealed that these linear trends did not fully bear out due to differences between the two overseas EA samples, with overseas Chinese participants appearing more similar to the Euro group compared to their overseas Korean counterparts. The linear trend hypothesis was also not supported by planned comparisons examining variables of perceived social status or social anxiety as measured by the SPAI. Overall, the ordering of group means did not appear to be consistent with

a linear trend, and findings from post hoc comparisons in which overseas EA groups showed unexpected patterns complicate interpretation of results.

   Cultural discrepancy hypothesis. Planned contrast analyses were carried out to test the prediction that unicultural groups (i.e., Euro and overseas EA groups) would score higher on levels of social self-efficacy, as measured by the three subscales of the ICQ, compared to bicultural groups (i.e., 1st- and 2nd-generation EAH groups). A significant effect emerged for the Initiation subscale of the ICQ, $t(330) = 3.03$, $p = .002$, $r = .17$, but there were no significant effects found for the Negative Assertion subscale, $t(688) = .59$, $p = .28$, $r = .02$, or Disclosure subscale, $t(688) = 1.15$, $p = .13$, $r = .04$. Exploration of post hoc comparisons on the Initiation subscale showed that the pattern of means across the five cultural groups was generally consistent with the contrast hypothesis. However, while the overseas Chinese group scored significantly higher compared to the 1st- and 2nd-generation EAH groups, the Euro and overseas Korean groups fell in-between and did not differ from the latter three groups. These findings indicate that on average, unicultural groups perceived themselves as more socially competent, specifically with respect to initiating social interactions, compared to bicultural groups. A graphical representation of the planned comparison means for initiation social self-efficacy is shown in Figure 1.

   Figure 2 presents a graph of the planned comparison means for perceived social status variables. Contrast tests for these variables revealed that, as predicted, the unicultural groups scored higher on social comparison ratings compared to the bicultural groups, $t(688) = 5.91$, $p < .0001$, $r = .22$. Post hoc comparisons revealed that both of the overseas EA groups scored significantly higher than the Euro, 1st-generation EAH, and 2nd-generation EAH groups on social comparison, with the latter three groups not differing from one another. Thus, on average,

unicultural groups rated themselves higher relative to dominant members compared to bicultural groups; however, the observed differences between unicultural and bicultural groups appear to be largely driven by the overseas EA groups. With respect to submissive behaviour, a significant effect emerged for the prediction that the unicultural groups would report lower levels of submissiveness compared to the bicultural groups, $t(688) = 2.52$, $p = .006$, $r = .10$. Further examination through post hoc comparisons indicated no significant differences between groups, although the means were all in the predicted direction. While these post hoc findings might appear to contradict the planned contrast results, this is likely due to the greater statistical power inherent in planned contrast analyses for detecting differences.

Figure 3 shows a graphical representation of the means for measures of distress. With respect to social anxiety, the unicultural groups were found to report significantly lower levels of social anxiety compared to the bicultural groups on the SPAI, $t(688) = 5.02$, $p < .0001$, $r = .19$, as expected. Post hoc comparisons showed that the pattern of means for the SPAI across the five cultural groups was generally consistent with predictions. Notably, the overseas Chinese group reported significantly lower levels of social anxiety compared to both Vancouver East Asian samples, with the Euro and overseas Korean groups falling in-between and not differing from either of the latter groups. Similarly, a significant effect emerged for the contrast test predicting that the unicultural groups would score lower than the bicultural groups, $t(687) = 3.99$, $p < .0001$, $r = .15$ on the CES-D, a measure of depression. Further inspection showed that consistent with the SPAI, the overseas Chinese group reported significantly lower levels of depression compared to both Vancouver East Asian samples, with the Euro and overseas Korean groups falling in the middle and not differing from the latter groups.

Contrary to predictions, no significant differences emerged between unicultural and bicultural groups on social anxiety as measured by the SADS, $t(328) = .97$, $p = .17$, $r = .05$. However, visual inspection of Figure 3 indicates that the pattern of means on the SADS is similar to that for the SPAI and CES-D with the exception of the higher mean of the overseas Korean group which appears to fall out of line with the pattern.

Overall, the results of the planned contrast analyses provide relatively strong support for the *cultural discrepancy hypothesis.* As a whole, the unicultural groups were found to have higher levels of social self-efficacy compared to the bicultural groups, although this pertained only to initiation of social interactions and not to skills relating to assertiveness or personal disclosure. On average, unicultural groups also scored higher on social comparison ratings and lower on submissiveness compared to the bicultural groups, consistent with predictions. Findings related to social anxiety as measured by the SPAI also provided support for the *cultural discrepancy hypothesis*; however, these results were not corroborated by findings on the SADS. Finally, the unicultural groups scored lower on a measure of depression compared to the bicultural groups. Although the planned contrast results support the predicted differences between unicultural and bicultural groups, these differences were less apparent when cultural groups were compared individually, though this was likely due to the greater statistical power afforded to planned contrast analyses compared to post hoc comparisons. Notably, the overseas Chinese group stood out as being the most different from the Vancouver East Asian groups on initiation social self-efficacy, social anxiety as measured by the SPAI, and depression.

Appraisal of Social Anxiety Symptoms

An extension of the *Asian socialization hypothesis* involved examining whether culturally-influenced values and social standards were associated with appraisals of social

anxiety symptoms. Specifically, it was predicted that overseas EA groups would appraise symptoms of social anxiety as less problematic compared to Euro and EAH individuals. Furthermore, it was predicted that EAH individuals residing in Vancouver would appraise symptoms of social anxiety as less problematic when in the context of an Asian cultural setting, compared to a Western cultural context, and that EAH and Euro individuals would not differ in their appraisals of social anxiety in the context of broader Western cultural norms.

Table 9 presents the means for the Social Experiences Scale (SES), a measure designed to tap appraisals of social anxiety symptoms, for each cultural group. First, in order to test whether EAH individuals appraised symptoms of social anxiety as less problematic when in the context of an Asian versus a Western cultural setting within Vancouver, a two-way (group) x (cultural prime) ANOVA was conducted on the SES for the two Vancouver East Asian samples. No significant differences emerged for group, $F(1, 280) = .11$, $p = .74$, partial $\eta^2 = .00$, cultural prime, $F(1, 280) = .084$, $p = .77$, partial $\eta^2 = .00$, or the interaction between group and cultural prime, $F(1, 280) = .63$, $p = .43$, partial $\eta^2 = .00$. Since there were no differences found across cultural prime conditions for either of the Vancouver East Asian samples, the cultural prime conditions were combined in each of the two groups to examine whether there were differences across the five cultural groups on appraisals of social anxiety symptoms. A one-way (group) ANOVA conducted on the SES revealed no significant differences between the five groups, $F(4, 294) = 2.34$, $p = .055$, partial $\eta^2 = .01$. Thus, contrary to predictions, social anxiety symptoms were not appraised as less problematic for the overseas EA samples compared to the Vancouver samples. Moreover, appraisals of social anxiety did not appear to be moderated by the cultural standards or norms of a given context within Vancouver East Asians.

Mediational Analyses

Given that the planned comparison analyses provided relatively strong initial support for the *cultural discrepancy hypothesis* (i.e., differences between unicultural versus bicultural groups on levels of initiation social self-efficacy and perceived social status variables in the predicted directions), a further exploratory step was to examine whether these social contextual variables showed suggestions of mediating the relationship between cultural group and social anxiety. Prior to describing these analyses, it is important to note the interpretive limitations with regard to meditational analyses when using a cross-sectional study design. One of the requirements for mediation involves establishing a timeline in order to infer a causal relation, so that mediators must temporally precede the outcome (Kazdin, 2007). In cross-sectional studies, however, the timeline between the mediator and the outcome is not necessarily established. Thus, it is important to bear in mind that the ensuing results can, at most, be only *suggestive* of mediation given the inability to draw causal inferences. However, ensuing discussions in this document refer to the social contextual factors as putative "mediators" for the sake of ease.

A multiple mediation model was employed in which putative mediators were examined simultaneously. Preacher and Hayes (2008) outline several advantages to specifying and testing a single multiple mediation model in place of separate simple mediation models. One advantage is that one can determine whether an overall indirect effect of a set of variables exists. It is also possible to determine to what extent specific variables mediate the relationship between the independent and dependent variables, conditional on the presence of other variables in the model. Further, the likelihood of parameter bias due to omitted variables is reduced in a multiple mediator model compared to when testing separate simple mediator models. Finally, testing multiple mediators simultaneously allows one to determine the relative magnitudes of the

specific effects of each mediator, thus allowing one to pit competing theories against one another.

Given the initial support for the *cultural discrepancy hypothesis*, the multiple mediation analysis in the present study examined variables associated with this hypothesis, i.e., social self-efficacy and perceived social status variables (as measured by social comparison and submissive behaviour) as potential mediators of the difference between unicultural versus bicultural groups in self-reported social anxiety (as measured by the SPAI). Although the variables personal and cultural acceptance of attention-seeking behaviours were not hypothesized to play a role in the *cultural discrepancy hypothesis*, they were also included as putative mediators in the multiple mediation model as a way of ruling out the *Asian socialization* rival hypothesis. That is, if these two variables were not found to mediate the relationship between cultural group and social anxiety, while the hypothesized mediators were found to do so, then this would provide further confidence in the findings and hence support for the *cultural discrepancy hypothesis*. The SADS measure of social anxiety was not examined as an outcome variable in the mediation analysis as planned contrast results indicated that it did not fit with predictions of the *cultural discrepancy hypothesis*, and provided only limited support to the *Asian socialization hypothesis*.

In a multiple mediation context, a specific indirect effect through a particular mediator is not the same as an indirect effect of a mediator in a single mediator model, unless that particular mediator is uncorrelated with other potential mediators. Essentially, the specific indirect effect of a particular mediator in a multiple mediation model represents its unique mediating ability, above and beyond the presence of other potential mediators in the model. Thus, multicollinearity, a situation in which two or more variables are highly correlated, plays a role in multiple mediation models such that the effects of the mediators on the dependent variable tend to

become more attenuated with higher correlations between mediating variables (Preacher &

Hayes, 2008). As such, correlations between the potential mediators in this study were examined

for multicollinearity. As seen from Table 5, intercorrelations between all potential mediating

variables were no greater than .50, thus indicating a lower likelihood that the significance of

specific indirect effects would be compromised.

The multiple mediation analysis was conducted using an established approach for testing

mediation models (Baron & Kenny, 1986; Preacher & Hayes, 2008), in which the paths of the

model are estimated using OLS regression, and the extent to which various criteria are met are

examined. Figure 4 presents the path diagram of the multiple mediation model with social

anxiety as measured by the SPAI as the outcome variable. The first step in the mediational

analysis involved testing whether the independent or predictor variable significantly accounted

for variability in the dependent variable. As shown earlier, the unicultural groups scored

significantly lower than the bicultural groups on social anxiety as measured by the SPAI. The

second step involved testing whether the independent variable was significantly associated with

each of the proposed mediators. Results showed that the two cultural groups were significantly

different on cultural acceptance of attention-seeking behaviour, initiation social self-efficacy,

social comparison, and submissive behaviour, but did not differ on remaining variables. The

third step involved testing whether the mediator affected the dependent variable when the

independent variable was controlled. As shown in Figure 4, initiation social self-efficacy, social

comparison, and submissive behaviour were significantly associated with social anxiety, after

controlling for cultural group.

In the final step, the direct effect between the independent variable and dependent

variable after controlling for potential mediators was required to be nonsignificant for full

mediation, or significantly reduced for partial mediation. Results showed that the direct effect of cultural group on social anxiety remained significant after controlling for potential mediators. However, the Sobel test showed that the total indirect effect of cultural group on social anxiety by way of potential mediators was significant, c - c' = 6.84, se = 1.76, Z = 3.90, p = .0001, suggesting partial mediation of the effect. Thus, these findings suggested that initiation social self-efficacy, social comparison, and submissive behaviour were partial mediators of the relationship between cultural group and social anxiety as measured by the SPAI, consistent with predictions of the *cultural discrepancy hypothesis*. Other hypothesized mediators, namely, negative assertion social self-efficacy and disclosure social self-efficacy, did not appear to mediate the relationship between culture and social anxiety, but these findings were in line with the planned contrast results. As expected, neither personal nor cultural acceptance of attention-seeking behaviours mediated the effect.

As discussed earlier, the cross-sectional nature of this study precludes the establishment of temporal precedence between the putative mediators and outcome variables. As such, it is possible that rather than social contextual factors mediating the cultural difference in social anxiety, the experience of social anxiety might in fact precede lower perceptions of initiation social skills and social status. Thus, a further step in the mediational analysis involved exploring the latter possibility by examining social anxiety as a putative mediator and initiation social self-efficacy, social comparison, and submissive behaviour as dependent variables. It was reasoned that if social anxiety was not shown to have a mediating effect, then this would provide more confidence in the potential mediating effects of the above social contextual variables.

Table 10 presents the results of the mediation effects of social anxiety on initiation social self-efficacy, social comparison, and submissive behaviour in three single mediation models. As

shown, social anxiety appeared to have a significant mediating effect on all three social contextual variables. In particular, results suggested that social anxiety was a full mediator of the effect when initiation social self-efficacy and submissive behaviour were outcome variables. As well, the Sobel test showed social anxiety to be a significant partial mediator of the relationship between cultural group and social comparison, $c - c' = -2.25$, $se = .48$, $Z = -4.72$, $p < .0001$. These findings suggest that the experience of social anxiety may temporally precede initiation social self-efficacy and perceived social status. Thus, while the results from the initial step of the mediational analysis appeared to suggest that social self-efficacy and perceived social status variables partially accounted for cultural differences in social anxiety, this predicted mediational model did not hold up to further scrutiny when social anxiety was examined as a potential mediator.

Examination of Bicultural Groups

The results up to this point suggest further examination of bicultural groups to explore potential differences in the experience of cultural discrepancy between the two groups. First, post hoc comparisons were examined to compare 1st-generation EAH and 2nd-generation EAH participants on measures of distress. As shown in Table 7, there were no significant differences between the two groups on social anxiety measured by either the SPAI or the SADS, or depression.

Next, bicultural groups were examined to see whether a discrepancy between one's heritage cultural values and mainstream Western values was related to social anxiety (measured by the SPAI). Thus, a hierarchical multiple regression analysis was carried out to examine whether cultural values as measured by independent self-construal, interdependent self-construal, heritage acculturation, and mainstream acculturation predicted social anxiety. The first step

involved entering both self-construal variables. In the second step, acculturation variables were entered while controlling for the effects of self-construal. As shown in Table 11, both independent and interdependent self-construal variables were significant predictors of social anxiety. However, the addition of acculturation variables entered in Step 2 did not explain further variance in the SPAI. As the heritage acculturation variable appeared to be statistically redundant in the initial analysis, the hierarchical regression analysis was repeated, excluding the heritage acculturation variable (shown in Table 11).

Results showed that when mainstream acculturation was entered alone in Step 2, the change in R^2 although small, became statistically significant, indicating that mainstream acculturation explained further variance in social anxiety. These findings suggested that bicultural participants who experienced a greater discrepancy with the mainstream culture, i.e., held lower independent self-construals, higher interdependent self-construals, and/or were less likely to adhere to North American values and behaviours, were more likely to report greater social anxiety measured by the SPAI. Interestingly, adhering to one's heritage values and behaviours did not predict social anxiety.

It was also of interest to examine whether there were differences between the two bicultural groups in the nature of their experience of discrepancy with the mainstream culture. Thus, the next set of analyses involved examining whether the 1st-generation EAH and 2nd-generation EAH participants differed with respect to the relative strength that social contextual variables relevant to the *cultural discrepancy hypothesis* predicted social anxiety measured by the SPAI. For each of the two bicultural groups, forced entry multiple regression analyses were conducted to examine whether initiation social self-efficacy, social comparison, and submissive

behaviour predicted social anxiety. All predictors were forced into the model simultaneously as they were considered to be of equal importance.

The results of the regression analyses for both 1st-generation EAH and 2nd-generation EAH participants are shown in Table 12. For 1st-generation EAH participants, the set of social contextual variables significantly accounted for variance on the SPAI. However, social comparison was not a significant predictor of social anxiety. For the 2nd-generation EAH group, all social contextual variables significantly predicted social anxiety. The relative strengths of initiation social self-efficacy and submissive behaviour in predicting social anxiety were similar across the two bicultural groups. Thus, the results of the regression analyses suggested that the experience of discrepancy was not exactly similar across the two bicultural groups, wherein social comparison did not appear to be relevant for 1st-generation EAH participants.

Discussion

The present study sought to examine whether cultural influences on social contextual factors were associated with higher self-reports of social anxiety in East Asian populations in North America. Two main competing hypotheses encompassing these social contextual variables were posited to explain why East Asian-heritage (EAH) individuals score higher on Western-based measures of social anxiety compared to their European-heritage (Euro) counterparts. First, the *Asian socialization hypothesis* proposed that higher levels of social anxiety in EAH individuals are associated with greater exposure to East Asian cultural values. Existing research indicates that social anxiety-related behaviours and having relatively lower perceptions of social status may be more normative in East Asian cultures. By contrast, the *cultural discrepancy hypothesis* proposed that higher reports of social anxiety in EAH individuals are related to the bicultural experience of discrepancy or dissonance between one's heritage culture and/or ethnic status and mainstream Western culture. Overall, the findings provided relatively strong support for the *cultural discrepancy hypothesis*, in that bicultural individuals reported greater levels of distress, as well as lower initiation social self-efficacy and perceived social status compared to members of unicultural groups.

The current study moved beyond the comparison of East Asian- and European-heritage individuals residing in North America, and is the first to systematically compare these groups to two different overseas East Asian (EA) samples. The opportunity to compare East Asian individuals in different sociocultural contexts and with varying degrees of exposure to Asian cultural values afforded a stronger test of the study hypotheses. Furthermore, inclusion of overseas East Asian samples in this study allowed for maximally culturally distinct participants, while specifically focusing on East Asians provided increased cultural homogeneity of the Asian

samples relative to previous studies. Drawing from cognitive and evolutionary theories of social anxiety, the current study provided a unique perspective in examining social contextual factors to explain cross-cultural differences in social anxiety, and extends the small but growing research that has moved beyond measures of global value orientations to elucidate such differences.

Ethnic Differences in Social Anxiety

Findings from the current study are generally in line with previous investigations showing that Asian-heritage students residing in North America self-report higher levels of social anxiety compared to those of European heritage. Interestingly, the differences in social anxiety between Euro and EAH groups were larger on the SPAI versus SADS measure of social anxiety, and were larger in magnitude for 2nd-generation EAH versus 1st-generation EAH groups. On the SPAI measure of social anxiety, the comparison of Euro participants with 2nd-generation EAH participants produced a medium effect size ($d = 0.50$), while comparison between the Euro and 1st-generation EAH groups yielded a small to medium effect size ($d = 0.31$). These findings are generally consistent with previous studies comparing Asian- and European-heritage populations in North America that employed the SPAI (Hong & Woody, 2007; Okazaki & Kallivayalil, 2002), and provided evidence that ethnic differences in social anxiety hold for both 1st- and 2nd-generation EAH groups.

The finding of greater social anxiety in both EAH participants is somewhat inconsistent with a previous study by Hsu and Alden (2007) which found ethnic differences between 1st-generation Chinese and European-heritage university students, but no differences between 2nd-generation Chinese and European-heritage students on the Social Interaction and Anxiety Inventory (SIAS) and the Social Phobia Scale (SPS). However, the same study found that both 1st- and 2nd-generation Chinese students reported greater social anxiety-related avoidance in an

interview-based assessment using the Anxiety Disorders Interview Schedule for DSM-IV

(ADIS-IV). Because the SIAS and SPS do not assess social anxiety-related avoidance as do the

SPAI and the SADS, it is possible that the former measures used in the Hsu and Alden study did

not capture specific aspects of social anxiety that are more relevant to 2nd-generation EAH

individuals. Further studies that examine both 1st- and 2nd-generation EAH individuals are

needed to determine whether specific aspects of social anxiety are relevant to generational status.

An unexpected finding from this study was the lack of significant differences between the

Euro and EAH groups on the SADS; nonetheless, small to medium effect sizes were observed in

the predicted direction between the Euro group and 1st- and 2nd-generation EAH groups ($d = 0.21$

and 0.28, respectively). It is possible that the lack of significant findings with regard to the

SADS may be partially accounted for by the current study's use of the original true/false version

of the SADS while many previous studies employing the SADS used the modified Likert-scale

version. In fact, effect sizes of two previous studies that employed the true/false version of the

SADS also produced effect sizes in the small to medium range ($d = 0.42$ and 0.49 in Sue et al.,

1983; Sue et al., 2001, respectively), which were lower than effects sizes of studies using the

Likert-scale version (Okazaki, 1997; 2000). Furthermore, the two studies employing the

true/false version consisted of fairly homogeneous samples (i.e., 2nd-generation Chinese males or

females), which may have resulted in reduced within-group variation in the Asian-heritage

samples and thus larger effect sizes.

There may also be differences in the characteristics of the EAH group in the current study

compared to Asian-heritage samples of previous studies that were captured by the SADS. For

example, while the current study's EAH sample resided in a largely multicultural city, most

previous Asian-heritage samples were from U.S. midwestern universities. It is possible that due

to living in predominantly European-heritage communities, the Asian-heritage samples in previous studies may have experienced greater levels of general discomfort and avoidance of social situations compared to Asians living in a more multicultural setting. This might be reflected in greater ethnic differences on the SADS for previous Asian-heritage samples compared to that for the current study's EAH sample.

The fact that the SPAI and SADS correlated fairly highly in this study ($r = .71$) indicates that they are measuring a common component; however, it is possible that the inconsistencies between the SPAI and the SADS in the current study may be related to the extent that they are employed as clinical assessment devices. The original purpose of the SADS was not to assess for clinical levels of social anxiety, but to create a general scale to measure discomfort and avoidance related to social interactional situations in normal undergraduates (Watson & Friend, 1969); indeed, the development of the SADS preceded the inclusion of the clinical condition of social phobia in diagnostic classification schemes. The appropriateness of the SADS as a clinical measure of social phobia has, in fact, been called into question, given its lack of ability to discriminate among clinical samples with anxiety disorders (Mattick & Clarke, 1998); as such, the SADS has been recommended for use as a measure of emotional distress rather than to specifically assess social phobia (Turner, McCanna, & Beidel, 1987).

By contrast, the SPAI was designed specifically to assess clinical levels of social anxiety, or a diagnosis of social phobia, and measures cognitive, behavioural, and affective symptoms of social phobia (Turner et al., 1989). Previous psychometric data has shown that individuals with social phobia score higher on the SPAI compared to those who were not socially anxious (Turner et al., 1989), and that the SPAI was a significant predictor of a social phobia diagnosis (Peters, 2000), providing support for the criterion validity of the SPAI. Thus, it is possible that Euro and

EAH groups in the current study did not differ with respect to subclinical discomfort and avoidance in social situations, but that differences were captured between these groups when assessing for clinical symptoms of social phobia.

Overall, findings from the current study comparing EAH and Euro individuals on social anxiety point to inconsistencies between the SPAI and SADS measures. In particular, the results on the SADS did not correspond to previous research on ethnic differences in social anxiety. These findings highlight the variability of results based on different self-report social anxiety measures. Future research using multiple methods of assessment of social anxiety, including behavioural and physiological indices, will help to discern whether the variability in these results is limited to self-report assessment, and clarify relationships between self-report measures of social anxiety.

Group Differences in Cultural Values

Findings from planned comparisons generally supported the notion that construing one's sense of self in terms of individualistic values was associated with decreasing exposure to East Asian cultural values, while endorsing a self-construal that is based on relations with others was related to greater exposure to East Asian cultural values. These analyses tested a linear trend based on the premise that the overseas EA groups would have the greatest degree of exposure to East Asian cultural values, followed by 1st-generation EAH participants, 2nd-generation EAH participants, and finally the Euro group. However, post hoc comparisons revealed unexpected findings in that overseas Chinese participants were the most likely to endorse an independent sense of self, similar to the Euro group, and at the same time, reported the highest levels of interdependent self-construal. Furthermore, the overseas Korean and Chinese groups differed from one another on both types of self-construal, contrary to theoretical assumptions. Overall,

the data did not appear to fully fit with a linear trend, and unexpected findings from post hoc comparisons seemed to challenge the assumption that the two overseas EA groups were not culturally different.

Prior to interpreting these findings, it is important to address the implicit ordinal assumptions underlying the hypothesis of a linear trend of self-construal. By virtue of testing a linear trend, the four groups tested (i.e., Euro, 1st-generation EAH, 2nd-generation EAH, and overseas EA) were assumed to represent ordinal data; that is, they represented ordered levels of exposure to East Asian cultural values. Although this ordinal assumption seems intuitive and may be argued, the degree of exposure to cultural values is an abstract and complex concept that is difficult to measure; thus, there is the possibility that this assumption may not be entirely correct.

One of the limitations of the ordinal assumption was that it was based on exposure to East Asian cultural values, and did not take into account the groups' differential exposure to East Asian *and* Western cultural values. Researchers have noted that individuals within Asian cultures show substantial variations in their relative focus on independent and interdependent self-construals (Aaker & Schmitt, 2001), and that collectivistic societies are not necessarily the direct opposite of individualism (Singelis, Bond, Sharkey, & Lai, 1999). Similarly, in a unique cultural environment such as Vancouver in which there is a large East Asian population, Euro individuals may in fact have greater exposure to East Asian cultural values than might be predicted. Hence, the study's findings that statistically meaningful linear trends for self-construal were not substantiated by post hoc comparisons suggest that the ordinal assumption may not be accurate. For that reason, examining a linear trend and grouping together overseas East Asians may not be appropriate, and results based on the ordinal assumption should be carefully interpreted.

One of the notable findings with respect to self-construal was that overseas Chinese participants reported relatively high levels of independent self-construal, while also maintaining a relatively high sense of interdependence. Although these results appear to be incongruent with existing cultural theories, it is possible that they, in fact, reflect a true state of affairs for these individuals. Indeed, a recent cross-national study by Xie, Leong, and Feng (2008) reported the same absolute values for the mean and standard deviation on the SCS independence scale ($M =$ 4.77, $SD = 0.63$) for a native Chinese student sample as those reported for the current study's Chinese sample. Thus, this prior finding provides some tentative support for the validity of the self-construal findings in the current study's Chinese sample.

A possible explanation for these self-construal findings may lie in China's rapid globalization and advancements in information technology over the past two decades, with the consequential increase in the intensity of exposure to Western culture (Zhang, 2009). Due to this phenomenon, people in Chinese society have been faced with exposure to both the global culture and their native culture, and this is particularly the case for young people living in urban areas who have experienced globalization in China for most of their lives (Zhang, 2009). A growing literature on the impact of globalization on the self-concept suggests that young people can develop both a global identity consistent with individualism that helps them communicate with people of other cultures either face-to-face or via interactive media (e.g., email, chat rooms), and a native identity based on traditional cultural values, which is likely used in interactions with family and friends (Arnett, 2002; Jensen, 2003). Indeed, the notion of the malleable self-concept has been well documented, wherein self-construals are thought to shift in response to the situational context and reference points (Trafimow, Triandis, & Goto, 1991). It has also been argued that China's booming economy in the last two decades has raised the standard of living,

which may have shifted the dynamics of relationships toward increasing interpersonal distance (Li, Zhang, Bhatt, & Yum, 2006).

Thus, the finding in this study that overseas Chinese participants reported both greater independent and interdependent self-construals is consistent with the notion of salient exposure to both traditional and Western cultural values. In light of this, and the notion of differential exposure to Asian and Western cultures, the observed differences between the overseas Korean and Chinese samples on self-construal seem plausible given the likelihood that Korea has not experienced the same degree of globalization in recent years compared to China.

At any rate, it is important to bear in mind that the interpretation of these self-construal findings is limited by the use of only one measure of self-construal, the Singelis Self-Construal Scale (SCS). Thus, it cannot be ruled out that the results were due to the SCS measure itself, rather than to the particular samples being studied. Given the multifaceted conceptualizations of independent and interdependent self-construal (Oyserman et al., 2002), it would be important to employ multiple measures of these constructs in future studies to ensure that the results are not an artifact of the particular self-construal measure used in this study.

Asian Socialization Hypothesis

The first main hypothesis proposed that higher self-reported social anxiety in EAH individuals is associated with degree of socialization to East Asian cultural values. Specifically, it was hypothesized that elevated levels of social anxiety in EAH individuals are related to an overlap between East Asian norms for social behaviour and Western measures of social anxiety, as well as the tendency for East Asians to make upward social comparisons and engage in low status-related behaviours. Similar to the analysis of self-construal variables, these analyses tested a linear trend hypothesis based on ordinal assumptions of the degree of exposure to East Asian

cultural values across cultural groups. Overall, the findings provided limited support for the *Asian socialization hypothesis*.

Social norms for behaviour was assessed by measures of an individual's personal and perceived cultural acceptance of attention-seeking behaviour. Results showed that contrary to predictions, personal acceptance of attention-seeking behaviour did not decrease in a linear fashion with increasing Asian socialization. With respect to participants' perceptions of how typical attention-seeking behaviour is in their culture, findings showed that the pattern of means for this variable did not appear to reflect a clear linear trend as predicted, but was characterized by a combination of linear and quadratic components, pointing to unexpected results in the overseas EA samples. In particular, overseas Chinese participants reported significantly greater cultural acceptance of attention-seeking behaviour compared to the other East Asian groups. Taken together, the results did not support the prediction that a greater degree of East Asian socialization was associated with being less personally accepting of attention-seeking behaviour, or perceptions that attention-seeking behaviour is less normative in one's native culture.

The study by Heinrichs et al. (2006) which also employed these measures found that individualistic countries were significantly more accepting of attention-seeking behaviour compared to collectivistic countries, but that there were no differences with respect to personal norms regarding acceptability of attention-seeking behaviour. Interestingly, when only the Euro and overseas Korean groups in this study were compared (excluding overseas Chinese), the results were in line with those of Heinrichs et al., and notably, the Heinrichs et al. study did not include China in their collectivistic country group. Also consistent with the Heinrichs et al. study was that the correlation between the Personal and Cultural Norm scales in this study approached zero. Heinrichs et al. interpreted this finding as reflecting the use of university students who may

be at a time in which they are forming individualized attitudes and thus hold different views from broader society. It has also been argued that measures of personal values or norms do not necessarily correspond to the extent to which people commonly believe the norm is important to their culture (Wan, Chiu, Peng, & Tam, 2007).

Findings with regard to perceived social status and social anxiety variables also did not provide support for the *Asian socialization hypothesis*. The linear trend analysis revealed that having more exposure to East Asian cultural values was not associated with making greater upward social comparisons or engaging in more submissive behaviours, and thus perceiving oneself as being relatively lower in social status. With respect to social anxiety, greater exposure to East Asian cultural values was not related to increasing scores on the SPAI measure of social anxiety. Although findings on the SADS measure appeared to be consistent with a linear trend in the predicted direction (i.e., that level of social anxiety tended to increase with degree of East Asian socialization), further exploration of results indicated that the ordering of means was not consistent with a linear trend. Specifically, the Korean group scored significantly higher on the SADS compared to the Chinese group, while the Chinese and Euro groups did not differ from one another. These results suggested that the observed linear trend appeared to be largely accounted for by the higher levels of social anxiety on the SADS reported by the overseas Korean group.

As a supplement to the *Asian socialization hypothesis,* the current study also examined whether culturally-influenced values and social standards were associated with *appraisals* of social anxiety symptoms. Findings revealed that appraisals of social anxiety did not differ between the Euro, EAH, and overseas EA participants. The finding that Euro and EAH individuals residing in Vancouver did not differ on how they appraised social anxiety was

consistent with predictions, and is in line with previous research that has found no differences in acceptability of social anxiety, or degree of impairment associated with social anxiety between Asian-heritage and European-heritage individuals (Hsu & Alden, 2007; Okazaki & Kallivayalil, 2002). Contrary to expectations, EAH participants did not appraise symptoms of social anxiety as less problematic when considering themselves in specific Asian versus Western cultural contexts within Vancouver.

A possible interpretation for the finding that appraisals of social anxiety were not moderated by the cultural norms of a given context within Vancouver may be related to issues of measurement. Because the instructions involving the cultural prime on the Social Experiences Scale were relatively lengthy, it is possible that EAH participants tended not to read through the instructions or did not grasp the entire content of instructions. Although these instructions underwent a manipulation check during the measurement development phase, participants in this phase of the study were aware that they were providing feedback on a new measure, and thus may have been more likely to be mindful of the instructions. Furthermore, since EAH participants lived in a largely multicultural city, it is possible that the manipulation asking them to consider either "Asian" versus "Canadian" social settings did not distinctly prime these contexts, because the "Canadian" context may have been perceived as a multicultural setting. Indeed, participant feedback during the development phase of the SES had revealed that for many, the cultural prime of a "Canadian" social setting elicited thoughts of people from different ethnic groups, although with people of predominantly European heritage.

Also contrary to predictions was the lack of cross-national differences in social anxiety appraisals. These results appear to be inconsistent with previous research demonstrating that shy-anxious children in China are more accepted and experience less psychological impairment

compared to shy-anxious children in North America (Chen et al., 1995). However, comparisons between studies may be difficult given that the Chen et al. study was based on child samples, and appraisals of social anxiety in children may differ from how social anxiety is appraised in adults. Furthermore, the self-reported appraisals assessed in the current study may not entirely map onto stigmatization related to social anxiety.

One possibility for the lack of cross-national differences in social anxiety appraisals is that increasing Western influences in overseas East Asian countries over time have increased negative perceptions of social anxiety. More recently, Chen et al. (2005) found that behaviours related to social anxiety were less positively associated with social and academic achievement, and were associated with peer rejection and depression in Chinese children. The authors attributed these findings to increased industrialization and acceptance of Western values in China. Overall, these results suggest that appraisals of social anxiety symptoms do not appear to differ according to the prevailing cultural standards or norms of a given context.

In sum, the findings did not appear to support the overall notion that degree of East Asian socialization was associated with higher self-reports of social anxiety. Although statistically meaningful linear trends were demonstrated with regard to cultural acceptance of attention-seeking behaviour and social anxiety measured by the SADS, closer inspection revealed that the ordering of group means did not substantiate these linear trends. In particular, overseas Chinese participants showed greater similarity to the Euro group compared to their Korean counterparts. Once more, these findings highlight the limitations of ordinal assumptions discussed earlier with regard to degree of exposure to East Asian culture, and thus require cautious interpretation.

Cultural Discrepancy Hypothesis

The second main hypothesis proposed that culture-related discrepancies faced by

bicultural East Asians living in North America are related to higher reports of social anxiety. Findings generally provided strong support for this hypothesis. In line with predictions, bicultural East Asians reported lower levels of social self-efficacy and perceived social status, as well as greater levels of generalized distress compared to members of unicultural groups. Although findings from the initial steps of a mediational analysis pointed to social self-efficacy and perceived social status as potential mechanisms in the elevated reports of social anxiety, this predicted mediational model did not hold up to closer scrutiny. The ensuing discussion in this section will address each of the aforementioned variables in turn with respect to results of the planned contrast analyses, followed by the findings from the mediational analysis.

Social self-efficacy. Findings showed that bicultural groups reported lower perceptions of their skills related to initiation of social interactions compared to unicultural groups, which is consistent with predictions. A surprising finding was that the latter results did not generalize to other forms of social self-efficacy assessed; that is, bicultural groups perceived their negative assertion and disclosure skills equally well to unicultural groups. It is possible that there are differences between these types of social skills that influence bicultural individuals' perceptions of competence. For example, there may be more ambiguity and less structure involved in the initiation of social interactions and relationships. Social initiation skills items on the ICQ measure such as "How good are you at going out of your way to start up new relationships?" or "How good are you at making good first impressions when getting to know new people?" illustrate the potential ambiguity with respect to *how* these skills are carried out in a Western mainstream context. On the other hand, negative assertiveness may require the use of more concrete skills in less ambiguous situations. This is demonstrated by an example of a negative assertion item on the ICQ: "How good are you at saying "no" when a date/acquaintance asks you

to do something you don't want to?" Thus, it is possible that learning and employing negative assertion skills in a Western mainstream context may be perceived by bicultural individuals as less challenging compared to initiating social interactions and relationships. Consistent with this reasoning are studies that have shown that Asian-heritage individuals are equally competent in their display of assertiveness via role-playing when rated on behavioural measures compared to Westerners (Sue et al., 1983; Sue et al., 2001).

It is also possible that perceptions of initiation social competence may be linked to one's relative social status. Given that social initiation behaviours are related to status (Packwood, 1974), and that bicultural East Asians may have lower perceptions of their relative social status, they may be less likely to initiate social interactions with others; however, it may be the case that once someone else initiates these interactions, bicultural East Asians may feel relatively competent in the subsequent use of their social skills, including negative assertion and personal disclosure. This may be related to the notion of *race-based rejection sensitivity* in which experiences of prejudice and discrimination can lead members of minority groups to anxiously anticipate interactions in intergroup contexts (Mendoza-Denton et al., 2002).

Another possible interpretation for the lack of cultural differences on perceptions of negative assertion and disclosure skills relates to the fact that the ICQ measure may not have been sufficiently sensitive. For example, items on the ICQ asked about one's negative assertion abilities in regard to acquaintances or companions, and previous findings from assertiveness studies have suggested that differences between Asians and Westerners tend to occur in the context of interacting with strangers (Zane et al., 1991). Similarly, items assessing perceptions of one's ability to disclose personal information were ambiguous with respect to the target person(s) of this information (e.g., "How good are you at telling someone things that you do not

want everyone to know?"). Thus, it is possible that respondents may have considered these skills in the context of family or friends, which may have had the effect of attenuating cultural differences.

Future research to clarify these findings might involve employing other measures rather than self-report to evaluate social skills, such as behavioural indices. It would also be important to include a more comprehensive domain of assertiveness that involves aspects of 'positive' assertiveness, such as expressing one's opinion. Also, given the multifaceted nature of social competence, there may be other not yet identified domains that may demonstrate cultural differences. Furthermore, the subscales of the ICQ were developed to assess interpersonal task domains (e.g., initiating conversations and refusing unreasonable requests), but do not assess the behavioural skills that determine effective social interactions, such as social expressivity (Buhrmester et al., 1988). Finally, items evaluating social competence need to be more specific with respect to the target person(s) with, as well as the context in which these skills are used.

Overall, the finding that bicultural participants reported lower perceptions of their social initiation skills is consistent with the notion that bicultural East Asians, who are faced with two sets of cultural norms, are less likely to identify or 'fit' with the mainstream cultural norms compared to members of unicultural groups, and therefore may call into question their social abilities in a mainstream Western context. In line with this, indicators of cultural values, independent self-construal and mainstream acculturation, were significantly correlated with initiation social self-efficacy (rs = .50 and .29, respectively) within the bicultural groups. However, interdependent self-construal and heritage acculturation were not found to correlate with initiation social self-efficacy, suggesting that Western cultural values are more strongly associated with perceptions of social initiation skills compared to East Asian cultural values.

Cultural writers have argued that bicultural individuals face the constant challenge of meeting the typically contrasting standards, principles, or values of their heritage and mainstream cultures (David et al., 2009), and that the inability to effectively manage potential conflicts arising from such circumstances may place them at increased risk for psychological problems (Tsai, Chentsova-Dutton, & Wong, 2002). Although there is no previous research examining bicultural individuals' perceived self-efficacy specific to social situations, a recent study has found that greater perceived bicultural self-efficacy, or the ability to effectively negotiate two cultural identities, is associated with lower levels of anxiety and depressive symptoms among bicultural individuals (David et al., 2009).

Perceived social status. With respect to measures of perceived social status, bicultural groups as a whole scored lower on social comparison ratings and reported higher levels of submissiveness compared to unicultural groups, consistent with the *cultural discrepancy hypothesis*. Thus, experiencing cultural and ethnic discrepancy with the mainstream culture appeared to be associated with lower perceptions of one's relative social status compared to having a cultural or ethnic background that was consistent with one's dominant cultural norms. The convergence of findings in the two complementary measures of perceived social status further strengthened these results.

However, given that post hoc findings revealed that the difference between groups on social comparison ratings was largely driven by overseas East Asian participants, this might suggest an alternative explanation. That is, it is possible that the higher perceptions of relative social status in overseas East Asians may be confounded by differential implications of attending university. Compared to the 53% of young adults in Canada who attain postsecondary education (Lambert, Zeman, Allen, & Bussiere, 2004), only 15% of young adults in China are enrolled in

higher education institutes (Department of Planning Ministry of Education, 2003). As such, Chinese university students are likely to be part of an elite minority, and thus perceive themselves as being higher in social status relative to others in Chinese society. In Korea, approximately 50% of young people attain higher education, similar to the rate in Canada (Kuczera, Kis, & Wurzburg, 2009), so being a university student per se in Korea may not hold as much distinction as might be the case in China. However, the Korean sample in this study were students from Seoul National University, which is regarded as the most renowned and competitive post-secondary institution in South Korea (Baty, 2009). In this way, Korean participants in this study may endorse exceptionally higher perceptions of social status compared to most other Koreans. Thus, for both overseas East Asian groups, their higher reported perceptions of social status may reflect their university membership rather than their cultural consistency with the dominant culture. Further research in a general population sample would help to clarify these speculations.

Measures of distress. Consistent with the *cultural discrepancy hypothesis,* bicultural groups reported higher levels of social anxiety measured by the SPAI compared to unicultural groups. However, these results were not corroborated by findings on the SADS measure of social anxiety. Closer examination revealed that the inconsistency between the results on the SPAI and SADS appeared to arise from the overseas Korean group, which reported among the lowest scores on the SPAI, but the highest score on the SADS. All the other groups showed consistent patterns of reporting across the SPAI and SADS. Furthermore, while the overseas Korean group's score on the SPAI was consistent with that of the overseas Chinese group as expected, the Korean group's score on the SADS was significantly higher than that for the Chinese group.

A possible explanation for this inconsistency in overseas Korean participants may be related to the translation of social anxiety measures into Korean, and the possibility that the translated items had differential conceptual meanings for the Korean group. In fact, the results from the exploratory factor analysis indicated that while the data supported a unifactorial structure of the SADS for the Vancouver samples and overseas Chinese group, the structure of the SADS for the Korean group appeared to be most consistent with either a single-factor or three-factor solution. On the other hand, the SPAI appeared to demonstrate structural equivalence across all groups. Thus, the possibility that the Korean-translated version of the SADS may not be cross-culturally equivalent in this study should not be ruled out.

Interpretation of the inconsistent findings on the SPAI and SADS is made more complicated by mixed findings from previous cross-national studies of social anxiety. In contrast to the current study's overseas Chinese participants, Xie et al. (2008) found that native Chinese students reported higher levels of social anxiety on the SADS compared to their European American counterparts ($d = 0.65$); however, it is notable that the study employed the Likert-type scale version of the SADS, which, as discussed earlier, may produce larger effect sizes compared to the true/false version used in this study. Heinrichs et al. (2006) showed that members of collectivistic countries reported higher levels of social anxiety on the Social Interaction and Anxiety Scale (SIAS) compared to those from individualistic countries, which appears to be consistent with the overseas Koreans' responses on the SADS in the present study. By contrast, a study by Dinnel, Kleinknecht, and Tanaka-Matsumi (2002) did not find any differences between participants from the U.S. (i.e., of European heritage) and Japan on levels of social anxiety as measured by the Social Phobia Scale (SPS), consistent with the current study's findings on the SPAI measure, but found that Japanese participants reported lower social anxiety compared to

U.S. participants on the SIAS. These findings highlight the variability in results of self-report measures of social anxiety across different East Asian samples, and point to the need for multiple methods of assessment of this construct in cross-national samples to clarify these discrepant findings.

It is notable that there were significant gender effects found on the SPAI in the current study, in which females tended to report higher levels compared to males on this measure. Given that the two overseas East Asian groups had a higher proportion of males versus females compared to the other samples, the possibility that gender may have contributed to the pattern of results on the SPAI cannot be completely ruled out. However, the findings of a lack of gender effect on the SADS, as well as the fact that the strength of effect of cultural group on the SPAI remained largely unchanged when gender was controlled for, suggest that the influence of gender on the SPAI may be minimal.

The current study also assessed levels of depression to explore whether the experience of cultural discrepancy was specific to social anxiety, or related to a more generalized distress. Results showed that bicultural groups reported higher levels of depression compared to unicultural groups, suggesting that the experience of discrepancy for bicultural individuals may be associated with both social anxiety and depression, or a higher level of generalized distress. These findings are consistent with the concepts of acculturative and bicultural stress, which are associated with a range of psychological effects that include anxiety and depression (Berry et al., 1987; David et al., 2009). Thus, the higher reports of social anxiety in bicultural East Asians may in fact be associated with cultural discrepancy as part of the larger experience of acculturative and/or bicultural stress. However, it is possible that the observed cultural differences on both social anxiety and depression may reflect a high degree of co-occurrence of these forms of

distress, and thus may be concealing a more specific form of distress associated with the bicultural experience. Future research is needed to tease out the unique effects of biculturalism on both social anxiety and depression to understand whether the bicultural experience is indeed related to a pattern of generalized distress.

Overall, the findings suggest that higher reports of social anxiety in EAH individuals are related to the experience of cultural and ethnic discrepancy, as reflected in lower perceptions of both social competence and relative social status. These results are in line with current cognitive models that propose that social anxiety is associated with lowered perceptions of one's ability to meet social standards for behavior (Carver & Scheier, 1986; Clark & Wells, 1995), and extend findings of previous studies of social self-efficacy and social anxiety (e.g., Bieling & Alden, 1997) to take into account a culture-related context. The findings are also consistent with the notion that being of minority status may be related to greater experiences of social anxiety, which provides some support for the evolutionary model of social anxiety. Partial correlations between perceived social status variables and social anxiety, controlling for depression, were shown to be significant for both social comparison ratings ($r = -.39$) and submissive behaviour ($r = .58$), suggesting that social anxiety was uniquely related to perceived social status variables. Consistent with this idea are findings from group process research showing that Asian group members who were in the numerical minority in Caucasian-dominated groups tended to exhibit more social anxiety-related behaviours, such as being passive and introverted, or withdrawing from discussions compared to their Asian counterparts in more balanced or homogeneous group settings (Li, Karakowsky, & Siegel, 1999).

Mediational analysis. Mediational analyses were conducted to further test whether social self-efficacy and perceived social status accounted for cross-cultural differences in social anxiety

(measured by the SPAI) between unicultural and bicultural groups. The first part of this analysis showed that, when considered simultaneously, initiation social self-efficacy, social comparison ratings, and submissive behaviour partially mediated the relationship between cultural group and social anxiety, which is consistent with predictions. However, due to the cross-sectional nature of this study, it was possible that rather than social contextual factors mediating the cultural difference in social anxiety, the experience of social anxiety might in fact precede lower perceptions of initiation social competence and social status. Thus, a further step in the mediational analysis was carried out examining social anxiety as a putative mediator and initiation social self-efficacy, social comparison, and submissive behaviour as dependent variables. If social anxiety was not shown to have a mediating effect, then this would provide more confidence in the potential mediating effects of the above social contextual variables.

Results showed that the predicted model did not appear to hold up when further scrutiny was applied to the mediational analysis. Specifically, findings from three separate mediational analyses showed that social anxiety significantly mediated the effect when social self-efficacy and perceived social status variables were examined as outcome variables. Thus, these findings undermine the hypothesized model that social self-efficacy and perceived social status variables preceded, and thus possibly mediated, the experience of social anxiety. Given the interpretive limitations with respect to the study's cross-sectional design, future studies employing longitudinal or experimental designs are ultimately required to fully disentangle the direction of the relationships between social self-efficacy/perceived social status and social anxiety. As well, such designs should be used to evaluate other viable mechanisms underlying the higher reports of social anxiety in bicultural versus unicultural groups.

In sum, the findings provide relatively strong support for the *cultural discrepancy hypothesis*. Planned contrast analyses generally showed predicted differences between unicultural and bicultural groups on social self-efficacy, perceived social status variables, and measures of distress. Notably, differences on social self-efficacy were specific to initiation social self-efficacy, and did not include social skills related to negative assertion or disclosure. Also, findings on the SADS measure of social anxiety fell out of line with predictions, specifically due to the responses of the overseas Korean group. While initial findings from a mediational analysis suggested that social self-efficacy and perceived social status were possible mechanisms of the higher levels of social anxiety in biculturals, these findings did not stand up to further scrutiny regarding the directionality of the potential mediating effect.

Bicultural Experience of Cultural Discrepancy

Given the relatively strong support for the *cultural discrepancy hypothesis,* further exploration of bicultural groups was undertaken. A multiple regression analysis was conducted to examine whether a discrepancy between one's heritage cultural values and mainstream Western values was related to social anxiety (measured by the SPAI). Findings revealed that experiencing greater discrepancy with the host Western culture as represented by a lower independent self-construal, higher interdependent self-construal, and/or lower adherence to North American cultural values and behaviours predicted social anxiety. These results are in line with previous studies showing that EAH students who emphasized an independent self-construal, consistent with the host culture, had better psychological adjustment compared to those with a more interdependent self-construal (Cross, 1995; Oguri & Gudykunst, 2002). Interestingly, heritage acculturation did not appear to predict social anxiety, suggesting that retaining one's East Asian cultural identity and behaviours may not necessarily denote a lack of 'fit' with

mainstream North American culture; rather, adhering less to a mainstream identity and construing one's sense of self as more interdependent and less independent may be relevant in the bicultural experience of discrepancy.

The bicultural groups were also assessed for differences between 1st-generation EAH and 2nd-generation EAH individuals with respect to their experiences of cultural discrepancy. First, results showed that the two groups did not differ on measures of distress. Findings also revealed that 1st- and 2nd-generation EAH participants did not differ with regard to their views of the self. However, 1st-generation EAH participants were more likely to identify with their heritage culture, and less likely to adhere to North American cultural norms and behaviours compared to 2nd-generation EAH and Euro participants. These findings suggest that the cultural discrepancy experiences of the two bicultural groups differed with respect to acculturation to both heritage and mainstream values and behaviours. Although 2nd-generation EAH participants were more likely to adhere to North American values and behaviours compared to their 1st-generation counterparts, they were less likely to do so compared to their Euro counterparts. Thus, although they have had extensive exposure to North American cultural norms and customs, they did not identify with them as strongly as their Euro counterparts, most likely due to maintaining a connection to their East Asian cultural values. On the basis of these findings, 2nd-generation EAH participants' experience of discrepancy was likely not as related to being unfamiliar with expected mainstream values and norms as well as the host language, as was the case for 1st-generation EAH individuals, but perhaps more to having to effectively negotiate both heritage and mainstream cultural values and norms. While it might be expected that 2nd-generation EAH participants would report less distress compared to 1st-generation EAH participants due to being more familiar with Western mainstream values, there is a growing literature describing culture-

related intergenerational conflict, particularly for 2nd-generation EAH adolescents who are striving to fit in with their Western counterparts, but whose parents maintain strong ties to traditional East Asian values. Such intergenerational conflict has been associated with both anxiety and depression among East Asian bicultural adolescents (Costigan & Dokis, 2006). Thus, while 1st- and 2nd-generation EAH individuals may experience similar levels of social anxiety and depression, the specific sources of their distress may differ.

Next, results of regression analyses indicated that for 2nd-generation EAH participants, initiation social self-efficacy, social comparison, and submissive behaviour predicted social anxiety; however, only initiation social self-efficacy and submissive behaviour, and not social comparison, were significant predictors of social anxiety for 1st-generation EAH participants. These results further indicate that the experience of cultural discrepancy may not be entirely the same for the two bicultural groups. Given that social comparison was reasoned to reflect conflict related to being of minority status, this may be initially less pertinent to 1st-generation EAH individuals because the *minority experience* may arise from repeated incidents of perceived discrimination (LaFromboise, Coleman, & Gerton, 1993), which may occur as daily interactions with mainstream members increase. Sue, Bucceri, Lin, Nadal, and Torino (2009) have argued that the contemporary experience of discrimination for minority group members has evolved from the more overt manifestations to more subtle, indirect, and often disguised forms of racism or discrimination, termed *racial microaggressions,* that may not be intentionally hostile but have adverse psychological impacts on the minority member. Due to this more subtle form of discrimination, it may require more time for immigrants to be aware of potentially discriminatory behaviours against them compared to 2nd-generation individuals. Another possibility as to why conflict related to being of minority status may be less relevant to 1st-generation EAH individuals

may be due to their greater self-segregation within Asian cultural settings, which is possible given the large number of Asian immigrants in Vancouver. Thus, having reduced contact with members of the mainstream culture would likely lessen the salience of their minority status.

On the other hand, perceiving oneself as lacking skills related to initiating social interactions in a Western society may be more relevant to immigrants who are trying to adjust to a set of unfamiliar cultural norms, often incompatible with one's own (Berry & Kim, 1988). Indeed, it has been suggested that 1st- and 2nd-generation Asian individuals differ with respect to the cultural challenges they face--while 1st-generation Asians are required to learn and adapt to North American customs and values, the psychological well-being of 2nd-generation Asians may be more related to their ethnic minority status in North American society (Tsai et al., 2002). Consistent with these ideas, cultural writers have posited that 1st-generation Asian immigrants experience acculturative stress, while 2nd-generation Asians are more likely to experience bicultural stress (Kuo & Roysircar-Sodowsky, 1999).

While differences in the experience of cultural discrepancy between 1st- and 2nd-generation EAH groups appear to exist, there may also be heterogeneity within these groups. It might be expected that as 1st-generation East Asian individuals increasingly acculturate to the mainstream norms, they would become more similar to their 2nd-generation counterparts, and experience increased challenges with respect to negotiating two salient sets of cultural norms as well as their minority status. There may also be variability within 1st- and 2nd-generation East Asians in North America, depending on the region in which they live. In multicultural cities such as Vancouver, the existence of communities or "ghettos" where certain minority groups live, would allow for the retention of heritage cultural norms among Asian-heritage groups (Costigan & Dokis, 2006). For example, many 2nd-generation East Asians may have grown up in such

settings and as a result, have had more exposure to their heritage culture and less to the mainstream culture. In such cases, these 2nd-generation East Asians might look more like their 1st-generation East Asian counterparts, and thus encounter difficulties with respect to being less familiar with mainstream North American culture. Thus, the preceding discussion of group and individual differences in the experience of discrepancy in bicultural individuals argues against lumping 1st- and 2nd-generation EAH individuals into one group, although their experiences of associated distress and views of the self appear to be similar. It also highlights the need for future research on biculturals to characterize this group in more detail using measures such as length of time in a Western country, language fluency, and place(s) of residence.

Theoretical Implications of Findings

The findings of the current study have implications with respect to the conceptualization of social anxiety across East Asian and Western cultures. While the findings provided support for the notion that bicultural East Asians' higher reports on a clinical measure of social anxiety are associated with the experience of discrepancy, or conflict, with respect to their cultural and/or ethnic background and the mainstream norms, it does not appear that higher reports of social anxiety are an artifact of construct overlap between East Asian cultural norms and Western social anxiety. That is, East Asian-heritage individuals did not report greater social anxiety because Western social anxiety-related behaviours were more normative for them. Further, the finding in this study of lower self-reported social anxiety in overseas East Asians, at least on a clinical measure, argues against previous speculations that East Asians are more vulnerable to heightened interpersonal sensitivity due to their cultural values, and thus endorse higher levels of social anxiety (Lee, Ng, Kwok, & Tsang, 2009; Okazaki, 1997). Thus, it does not appear that higher reports of social anxiety in East Asians residing in North America are associated with

East Asian cultural values per se, that is, because social anxiety-related behaviours are more normative for them, or because they are more prone to a "socially anxious personality".

Rather, findings from this study suggest that bicultural East Asians are reporting a 'true' greater experience of social anxiety as a part of their experience of cultural discrepancy in which they are faced with the constant challenge of negotiating between the social and interpersonal expectations of two disparate cultures, as well as the potential discrimination due to being of minority status (LaFromboise et al., 1993). This is an important distinction as it implies that bicultural East Asians are experiencing subjective distress related to their higher reports of social anxiety, which is in line with the findings that they did not differ on appraisals of social anxiety compared to European-heritage participants. Thus, there was nothing in this study's findings to suggest that the construct of social anxiety is different across East Asian and Western cultures. In fact, preliminary evidence has shown that the underlying nature of socioevaluative fears based on cognitive models of social anxiety is equivalent across individuals of Caucasian, Asian, Hispanic, and African American backgrounds within the U.S (Norton & Weeks, 2009).

At the same time, however, it is not yet known how a conceptualization of social anxiety that is developed from an East Asian cultural frame would compare with the Western-based construct of social anxiety. For example, are there differences in associated cognitive, affective, and behavioural symptoms, or the motives behind, or feared consequences related to anxiety in social situations? Based on an interdependent perspective, do the consequences of social anxiety and associated avoidance have more impact on the collective rather than on the individual? Existing research into cross-cultural conceptualizations of social anxiety has examined the culture-bound syndrome *Taijin Kyofusho* (TKS) reported in Japan and other Asian countries, in which the central underlying fear involves a fear of offending or embarrassing others, rather than

a fear of personal embarrassment (Kleinknecht, Dinnel, Tanouye-Wilson, & Lonner, 1994). Stein (2009) has argued that there are many common features to Western social anxiety and TKS, particularly given the findings that selective serotonin reuptake inhibitors (SSRIs) have been shown to be an effective treatment across both these conditions. Nonetheless, further investigations into culture-specific aspects of social anxiety based on an East Asian perspective would likely prove fruitful in assessing whether Western-based measures of social anxiety do, in fact, adequately capture the experience and expression of social anxiety in this population.

While the actual experience of social anxiety does not appear to differ across East Asian and Western cultures based on the study's findings, culture-related external factors appear to be important in the conceptualization of social anxiety in bicultural East Asians. As discussed earlier, the findings of the current study imply that bicultural East Asians' experience of social anxiety may be conceptualized as one of a number of psychological consequences noted to be associated with acculturative and bicultural stress. One of the underlying tenets of Western cognitive models is that social anxiety is associated with distorted or dysfunctional cognitions, and that realistically evaluating and shifting these negative cognitions can lead to an improvement in symptoms (Clark & Wells, 1995). For example, some common distorted cognitions in Western individuals with social anxiety include "I don't fit in", "I'll be rejected", or "I'll look foolish". For bicultural East Asians, their experience of cultural discrepancy with the Western mainstream society is an added external dimension to their experience of social anxiety compared to Western individuals, and thus their negative cognitions may reflect this reality. For example, for bicultural East Asians with social anxiety, the cognition "I don't fit in" may also reflect their true experience of cultural conflict. Thus, negative cognitions associated with social anxiety in bicultural East Asians may not present as typically distorted compared to those of

Westerners given the reality of their cultural discrepancy experiences, which may present a challenge to shifting such cognitions.

Clinical Implications of Findings

The findings of the current study demonstrate that social anxiety is not a homogeneous experience across East Asian populations. For overseas East Asians, residing among others who are familiar in terms of their cultural and ethnic background seems to serve as somewhat of a 'protective' factor in social anxiety, and possibly in social phobia, a disorder in which social anxiety becomes associated with distress and functional impairment. There has been an existing discrepancy in the literature demonstrating that although Asians in North America self-report higher levels of social anxiety compared to individuals of European heritage, the prevalence of social phobia in East Asian countries is lower compared to Western countries (Hwu, Yeh, & Chang, 1989; Wittchen & Fehm, 2001). The finding in this study that social anxiety on a clinical measure in overseas East Asians was lower compared to East Asian-heritage populations, and did not differ from that of European-heritage individuals appears to make more sense of this observed discrepancy. As the results of this study indicated that East Asians do not appraise social anxiety less negatively compared to European-heritage individuals, the higher reports of social anxiety in bicultural East Asians might suggest a higher rate of social phobia in this population compared to both European-heritage and overseas East Asians. Indeed, a recent epidemiological study conducted in the U.S. found a prevalence rate of social phobia of 3.3% in Asian-heritage individuals (Grant et al., 2005) compared to the rate of approximately 0.5% found in East Asian countries (Hwu et al., 1989; Lee et al., 1987); however, the rate for Asian-heritage populations was still lower than the prevalence rate (5.5%) for European-heritage populations in the U.S. (Grant et al., 2005).

Cross-national data on rates of depression suggest that the prevalence of depression is also higher in Asians living in North America compared to native Asian populations (Hwu et al., 1989; Takeuchi et al., 1998), consistent with the higher levels of generalized distress in bicultural East Asians found in this study. However, similar to social phobia rates, the prevalence of depression for Asian-heritage populations appears to fall between the rates for European-heritage and native Asian populations (Takeuchi et al., 1998). This pattern of increased rates of both social phobia and depression in Asians in North America compared to their native Asian counterparts may reflect stresses related to acculturation (Takeuchi et al., 1998), or may be related to perceived racial discrimination (Gee, Spencer, Chen, Yip, & Takeuchi, 2007). However, Asian-heritage populations may be less likely to meet the clinical significance criterion associated with these two conditions, thereby yielding lower prevalence rates compared to their European-heritage counterparts. For example, due to their experience of cultural and ethnic discrepancy, Asian-heritage populations may be less likely to label their fear in social situations as excessive or unreasonable, one of the criteria for the diagnosis of social phobia. It is also possible that as Asian-heritage individuals become increasingly acculturated to Western norms, they endorse more symptoms represented on Western structured clinical interviews, but still endorse fewer symptoms than do those of European heritage. Further research on the relationship between self-report measures of distress and diagnostic interviews is needed to understand the pattern of findings for these clinical conditions.

The notion that social anxiety in bicultural East Asians is part of the broader experience of acculturative and bicultural stress has implications for cross-cultural assessment of social anxiety. Culturally sensitive assessment needs to take into account experiences with regard to conflict between heritage and mainstream cultural values, as well as experiences related to

minority status and perceptions of discrimination. The findings also have implications for the treatment of social anxiety in bicultural East Asians. Treatment that takes into account the experience of acculturative or bicultural stress and the development of bicultural competence, particularly in the area of interpersonal and social effectiveness, may help to increase East Asian bicultural individuals' perceived social self-efficacy for both East Asian and Western social standards of behaviour. According to LaFromboise et al. (1993), bicultural competence consists of six dimensions: awareness and knowledge about the history, norms, and standards of a given culture, a positive regard for both cultural groups, a perception of bicultural self-efficacy, or one's ability to function effectively within two cultural groups, an ability to communicate verbally and nonverbally in both cultural groups, a willingness to learn a range of culturally appropriate behaviours or roles, and the ability to establish social networks in both cultural groups.

Thus, existing cognitive behavioural treatments for social anxiety should incorporate educational and social skills components that specifically address these culture-related issues. As discussed earlier, there may be challenges related to shifting negative cognitions in bicultural East Asians given that some of their cognitions may arise from realistic experiences of cultural discrepancy or perceptions of discrimination. As such, therapists need to be sensitive to these issues when engaging in the process of cognitive restructuring.

Future Directions

Although the findings of the present study build on the understanding of the higher reports of social anxiety in East Asians in North America, further research is needed to substantiate these results with alternate populations and methods of study. If the experience of cultural discrepancy is indeed associated with greater social anxiety, then it stands to reason that

for members of any ethnic group residing in a country in which the dominant culture is inconsistent with their native culture would experience greater social anxiety. Thus, future research might examine levels of self-reported social anxiety in Westerners residing in an East Asian country. To date, there do not appear to be any studies examining this issue. However, there is some intergroup research that has shown that individuals of European heritage experience greater anxiety when interacting with minorities compared to when they are interacting with other European-heritage individuals (Littleford, Wright, & Sayoc-Parial, 2005; Plant & Devine, 2003), suggesting that Western individuals might experience increased anxiety when in a non-Western-dominant culture.

It is also possible, however, that the cultural discrepancy hypothesis might not generalize to Westerners living in an East Asian country, owing to their individualistic values. That is, because individualism promotes uniqueness, autonomy, confidence, and a sense of competitiveness, Westerners may not feel as much of a need to 'fit' with the host culture, compared to those from collectivistic cultures, and such individualistic traits might overcome the feeling of being a social misfit. The overarching goal in East Asian collectivistic cultures of maintaining group harmony and peaceful interpersonal relations may make it more important that one fits into the host social setting and does not stand out from others. Thus, although the *cultural discrepancy* and *Asian socialization* hypotheses are presented in this study as being distinct, they may in fact be related because the experience of social anxiety would depend on the specific type of cultural discrepancy with regard to an individual's native socialization and host cultural values. For example, it is possible that cultural discrepancy is associated with social anxiety when members of East Asian collectivistic cultures are living in a host Western setting, but not when Westerners are living in East Asian settings. This suggests a more general premise

that going from a more collectivistic or less individualistic culture to a more individualistic host culture would be associated with greater social anxiety.

Although there has been less research on social anxiety in other minority groups in North America, findings to date do not appear to demonstrate the same robust ethnic differences observed between Asian-heritage and European-heritage populations. African American samples have been shown to score significantly lower compared to Caucasian Americans on social anxiety (Chapman, Kertz, Zurlage, & Woodruff-Borden, 2008; Gillis, Haaga, & Ford, 1995). As well, some studies have shown that Hispanic adolescents do not differ from their non-Hispanic Caucasian counterparts (La Greca & Harrison, 2005), while others have found higher levels of social anxiety among Hispanic-American college students (LeSure-Lester & King, 2004). Research examining whether experiences of cultural and ethnic conflict are associated with social anxiety in other minority populations in North America will also help to clarify the findings from this study. Furthermore, examining 3rd- or 4th-generation Asians in North America who have likely been raised with predominantly Western cultural values, but who are still members of an ethnic minority group, would help to delineate the interplay between lower perceived social self-efficacy and minority status in the experience of cultural discrepancy.

Limitations

The limitations of the current study need to be considered in the interpretation of the findings. First, the use of university students in this study may pose issues with respect to the generalizability of the findings to non-student populations. In particular, the bicultural East Asian students may have been a more acculturated group compared to the general population, given their opportunities to be exposed to Western cultural ideals and to interact with individuals of European heritage. Similarly, given the large population of Asians residing in Vancouver and

attending UBC, the Euro students may have had more exposure to East Asian culture compared to other Euro groups, particularly those who are in an older age cohort and may have had limited exposure to East Asian culture. While it was expected that the inclusion of the overseas East Asian students would promote the cultural distinctiveness of study participants, these participants may have had more exposure to Western cultural values during their university studies compared to other members of the general population. As discussed earlier, overseas East Asian participants' status as university students may confer to them a special membership that distinguished them from the general population, moreso than for the university students in Canada. Thus, the use of university student samples may have lessened the cultural distinctiveness among samples, with the possible result of showing less pronounced effects than if general population samples were employed.

The issue of generalizability seems particularly important to address with regard to the overseas Chinese participants given some of the unexpected findings from this sample. These included a higher endorsement of independent self-concept and greater acceptance of Western cultural behaviours, which challenged assumptions about their relative value orientations, as well as their similarity to their overseas Korean counterparts. In comparing their demographic background with that of the other samples, overseas Chinese participants appeared to be relatively more homogeneous with respect to age and in the sense that none of the Chinese participants had ever lived abroad. Notably, Chinese participants' parents had a distinctively lower educational background compared to all the other samples. On top of being distinct from other groups, these demographic factors generally appeared to be at odds with their greater sense of independent self-construal (i.e., not having lived abroad with potential exposure to Western culture and having a lower socioeconomic background). Although rapid globalization may have

contributed to this unexpected pattern of findings in the Chinese sample, it is difficult to know whether this sample is indeed representative, or in fact an anomaly. Thus, future studies need to employ general population samples, particularly for cultures in transition such as China, to clarify and replicate the current study's findings.

There are also limitations of this study related to measurement issues. First, the North American participants were administered the questionnaires through an online survey, while the overseas East Asian participants responded to questionnaires using paper-and-pencil measures. Although it is possible that such differences in administration method might introduce bias in the results, there is evidence to suggest that paper and computer-based measures yield similar results (Coles, Cook, & Blake, 2007; Schulenberg & Yutrzenka, 2001).

Second, modifications were made to the RSBQ-M and Social Comparison Rating Scale (SCRS) measures that involved specifying the reference group or culture that participants were to consider when responding to these questionnaires. It is possible that the specification of the reference group or culture may have primed participants' responses. Also, for the SCRS, the specified reference group (i.e., dominant group) differed across North American and overseas groups; thus, the instruction for North American participants to compare themselves to other "Canadians" may have possibly led to heterogeneity in the reference group used in responding to the questionnaire for these participants. However, the fact that all five groups had similar standard deviations on the SCRS provides some evidence to suggest that these groups did not differ in degree of heterogeneity with respect to the reference group.

The interpretation of findings is also limited by the single method of assessment in the form of self-report measures, with the majority using Likert-type scales. Using a single method of assessment can lead to spurious associations due to shared method variance. Future studies

employing multiple methods of assessment, such as behavioural and physiological indices, will help to discern whether the findings in this study are limited to self-report assessment. A fruitful area for future investigation might involve examining various physiological responses to stress and anxiety across cultural groups, given potential differences in cardiovascular reactivity to stress (Shen, Stroud, & Niaura, 2004) and propensity for blushing (Heinrichs et al., 2006) between East Asian and Western populations. Finally, further research is needed to assess the measurement equivalence of social anxiety and depression measures across cultures, given that initial findings have suggested possible differences in response patterns across ethnic populations on measures of distress (Hambrick, Rodebaugh, Balsis, Woods, Mendex, & Heimberg, 2009).

In summary, findings from this study suggest that higher self-reports of social anxiety in East Asian-heritage individuals may be associated with the experience of cultural and ethnic discrepancy with the Western mainstream culture. Compared to members of unicultural groups, bicultural East Asians reported greater levels of social anxiety and depression, as well as lower levels of initiation social self-efficacy and perceived social status. There was less support for the notion that social self-efficacy and perceived social status mediated the elevated social anxiety levels in bicultural East Asians; however, interpretation in this regard was limited by the study's cross-sectional design. Findings from this study suggest that the role of cultural discrepancy in elevated social anxiety merits further investigation using longitudinal or experimental designs. Furthermore, future research needs to take into account generalized distress in bicultural East Asians, and should not necessarily assume that East Asian cultures do not differ.

Table 1

Summary of Studies Comparing Asian- and European-heritage Samples on Social Anxiety

Study	Ethnicity	Generational Status[a]	Sample Size (N)	Measure(s) Employed	Effect Size (d)
		Sample Characteristics			
1. Lau et al. (2009)	Mix of Asian students	1st & 2nd	116	SAS-A	0.25
	Euro students	?	148		
2. Hong & Woody (2007)	Korean (student & community)	1st	251	SPS	0.74
				SPAI	0.45
	Euro (student & community)	$\geq 3^{rd}$	254	SADS	0.97
3. Hsu & Alden (2007)	Chinese students	1st & 2nd	112	SIAS	0.51[b] 0.09[c]
	Euro students	$\geq 2^{nd}$	60	SPS	0.67[b] 0.06[c]
4. Lee et al. (2006)	Mix of Asian students	1st & 2nd	45	SPAI	0.18
	Euro students	$\geq 1^{st}$	38		
5. Okazaki & Kallivayalil (2002)	Mix of Asian students	1st & 2nd	200	SPAI	0.55
	Euro students	$\geq 2^{nd}$	200		

Table 1 (continued)

Summary of Studies Comparing Asian- and European-heritage Samples on Social Anxiety

| | Sample Characteristics | | | | |
Study	Ethnicity	Generational Status[a]	Sample Size (*N*)	Measure(s) Employed	Effect Size (*d*)
6. Okazaki et al. (2002)	Mix of Asian students	1st & 2nd	40	SPAI	0.77
	Euro students	≥ 2nd	40		
7. Sue et al. (2001)	Chinese female students	2nd	36	SADS	0.42
				FNE	0.57
	Euro female students	?	19		
8. Okazaki (2000)	Mix of Asian students	≥ 1st	39	SADS	0.89
				FNE	0.28
	Euro students	≥ 2nd	42		
9. Okazaki (1997)	Mix of Asian students	≥ 1st	165	SADS	0.68
				FNE	0.25
	Euro students	≥ 2nd	183		
10. Sue et al. (1983)	Chinese male students	2nd	36	SADS	0.49
				FNE	0.67
	Euro male students	?	22		

Note. Euro = European-heritage; SAS-A = Social Anxiety Scale for Adolescents; SIAS = Social Interaction Anxiety Scale; SPS = Social Phobia Scale; SPAI = Social Phobia and Anxiety Inventory; SADS = Social Avoidance and Distress Scale; FNE = Fear of Negative Evaluation Scale.

[a]1st = born outside of North America; 2nd = born in North America.

[b]Effect size for difference between 1st-generation Chinese and European-heritage groups.

[c]Effect size for difference between 2nd-generation Chinese and European-heritage groups.

Table 2

Characteristics of Study Samples

	Cultural Group				
	Euro	2nd-EAH	1st-EAH	Korean	Chinese
Variable	($n = 103$)	($n = 93$)	($n = 187$)	($n = 189$)	($n = 120$)
Gender (% female)	78.6	74.2	70.1	33.3	40.0
Mean age (*SD*)	22.41 (2.68)	20.28 (1.85)	20.96 (2.18)	21.5 (2.53)	19.3 (0.89)
Father's education (%)					
Some high school or less	7.8	12.9	9.1	5.8	40.8
High school graduate	13.6	20.4	17.1	20.6	32.5
College or technical/trade school	21.3	31.1	26.2	5.7	21.6
University degree	57.4	35.5	47.6	66.7	4.9
Mother's education (%)					
Some high school or less	1.9	19.4	12.8	7.9	60.0
High school graduate	19.4	29.0	28.9	33.9	21.7
College or technical/trade school	29.2	20.5	32.1	5.8	15.0
University degree	49.5	31.2	26.3	52.4	3.3

Note. Euro = European-heritage; 2nd-EAH = 2nd-generation East Asian-heritage; 1st-EAH = 1st-generation East Asian-heritage.

Table 3

Differences in Specific Measures Across Study Samples

	Study Sample			
	Vancouver		Korea	China
Measure	Euro	EAH		
VIA	Administered	Administered	Not administered	Not administered
RSBQ-M	Respondents asked to refer to "Canadian culture"	Respondents asked to refer to "Asian culture"	No reference to specific culture	No reference to specific culture
SES	Respondents asked to consider a "Canadian social setting"	Respondents asked to consider either an "Asian social setting" or "Canadian social setting"	No reference to specific social setting	No reference to specific social setting
SCRS	Respondents asked to rate themselves "in comparison to most other Canadians"	Respondents asked to rate themselves "in comparison to most other Canadians"	Respondents asked to rate themselves "in comparison to other Korean people"	Respondents asked to rate themselves "in comparison to other Chinese people"

Note. Euro = European-heritage; EAH = East Asian-heritage; VIA = Vancouver Index of Acculturation; RSBQ-M = Reactions to Social Behaviour Questionnaire – Modified; SES = Social Experiences Scale; SCRS = Social Comparison Rating Scale.

Table 4

Internal Consistency Coefficients for Study Measures Across Cultural Groups

	Cultural Group				
	Euro	2nd-EAH	1st-EAH	Korean	Chinese
Measure	($n = 103$)	($n = 93$)	($n = 187$)	($n = 189$)	($n = 120$)
SCS					
Independence	.68	.69	.72	.65	.60
Interdependence	.73	.74	.70	.60	.69
VIA					
Heritage	.91	.89	.86	--	--
Mainstream	.87	.89	.88	--	--
RSBQ-M					
Personal norm	.74	.80	.78	.78	.76
Cultural norm	.71	.68	.69	.76	.65
ICQ-R					
Initiation	.91	.85	.88	.84	.73
Negative Assertion	.88	.86	.86	.82	.78
Disclosure	.81	.77	.85	.85	.71
SCRS	.88	.91	.91	.86	.90
SBS	.77	.84	.83	.79	.74
SPAI	.99	.99	.98	.99	.98
SADS	.95	.92	.91	.89	.89
CES-D	.89	.91	.87	.88	.89
SES	.97	.98	.97	.96	.97

Note. Euro = European-heritage; 2nd-EAH = 2nd-generation East Asian-heritage; 1st-EAH = 1st-generation East Asian-heritage; SCS = Singelis Self-Construal Scale; VIA = Vancouver Index of Acculturation; RSBQ-M = Reactions to Social Behaviour Questionnaire - Modified; ICQ-R = Interpersonal Competence Questionnaire - Revised; SCRS = Social Comparison Rating Scale; SBS = Social Behaviour Scale; SPAI = Social Phobia and Anxiety Inventory; SADS = Social Avoidance and Distress Scale; CES-D = Centre for Epidemiological Studies – Depression Scale; SES = Social Experiences Scale.

Table 5

Intercorrelations of Measures[a]

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Independent SCS	---												
2. Interdependent SCS	.19**	---											
3. Personal norm (RSBQ-PN)	.20**	.16**	---										
4. Cultural norm (RSBQ-CN)	.11*	-.13**	-.02	---									
5. Initiation (ICQ-I)	.47**	.15**	.20**	.02	---								
6. Negative assertion (ICQ-NA)	.32**	-.07	.11**	.03	.37**	---							
7. Disclosure (ICQ-D)	.36**	.09*	.11**	.02	.49**	.43**	---						
8. Social comparison (SCRS)	.23**	.03	.18**	.10**	.41**	.22**	.19**	---					
9. Submissiveness (SBS)	-.35**	.17*	-.17**	-.09*	-.46**	-.35**	-.26**	-.38**	---				
10. Social anxiety (SPAI)	-.34**	.04	-.15**	-.09*	-.61**	-.26**	-.28**	-.44**	.63**	---			
11. Social anxiety (SADS)	-.45**	-.11*	-.17**	-.10*	-.67**	-.24**	-.33**	-.34**	.52**	.71**	---		
12. Depression (CES-D)	-.20**	-.03	-.08*	-.11**	-.30**	-.15**	-.16**	-.39**	.44**	.46**	.44**	---	
13. Social Experiences Scale	.17**	-.004	.17**	.05	.21**	.14**	.10**	.23**	-.26**	-.27**	-.24**	-.16**	---

Note. SCS = Singelis Self-Construal Scale; RSBQ-PN = Reactions to Social Behaviour Questionnaire – Personal Norm Scale; RSBQ-CN = Reactions to Social Behaviour Questionnaire – Cultural Norm Scale; ICQ-I = Interpersonal Competence Questionnaire – Initiation Subscale; ICQ-NA = Interpersonal Competence Questionnaire – Negative Assertion Subscale; ICQ-D = Interpersonal Competence Questionnaire – Disclosure Subscale; SCRS = Social Comparison Rating Scale; SBS = Social Behaviour Scale; SPAI = Social Phobia and Anxiety Inventory; SADS = Social Avoidance and Distress Scale; CES-D = Centre for Epidemiological Studies – Depression Scale; SES = Social Experiences Scale.

[a]The Vancouver Index of Acculturation (VIA) was not included here as it was administered only to Euro, 1st-generation EAH, and 2nd-generation EAH groups.

* $p < .05$. * *$p < .01$.

Table 6

Analysis of Variance for Social Contextual Variables and Distress Measures

Dependent Variable	Source	df	F	partial η^2	p
Personal norm	Cultural group (C)	4	19.55	.10	<.0001
	Gender (G)	1	7.16	.01	.01
	C X G	4	1.39	.01	.24
Cultural norm	Cultural group (C)	4	27.90	.14	< .0001
	Gender (G)	1	3.62	.01	.06
	C X G	4	.47	.00	.76
Social self-efficacy					
Initiation	Cultural group (C)	4	2.12	.01	.08
	Gender (G)	1	1.03	.00	.31
	C X G	4	2.34	.01	.05
Negative Assertion	Cultural group (C)	4	3.15	.02	.01
	Gender (G)	1	4.48	.01	.04
	C X G	4	.75	.00	.56
Disclosure	Cultural group (C)	4	5.75	.03	< .0001
	Gender (G)	1	1.22	.03	.27
	C X G	4	1 .59	.01	.18
Social comparison	Cultural group (C)	4	23.73	.12	< .0001
	Gender (G)	1	.01	.00	.91
	C X G	4	1.81	.01	.13

Table 6 (continued)

Analysis of Variance for Social Contextual Variables and Distress Measures

Dependent Variable	Source	df	F	partial η^2	p
Submissive behaviour	Cultural group (C)	4	1.80	.01	.13
	Gender (G)	1	2.57	.00	.11
	C X G	4	1.26	.01	.28
Social anxiety (SPAI)	Cultural group (C)	4	4.62	.03	.001
	Gender (G)	1	8.20	.01	.004
	C X G	4	.78	.01	.54
Social anxiety (SADS)	Cultural group (C)	4	4.18	.02	.002
	Gender (G)	1	.50	.00	.48
	C X G	4	1.33	.01	.26
Depression	Cultural group (C)	4	7.82	.04	< .0001
	Gender (G)	1	2.68	.00	.10
	C X G	4	1.86	.01	.12

Table 7

Means and Standard Deviations for Measures of Cultural Values, Social Contextual Variables, and Distress Measures by Cultural Group

	Cultural Group				
	Euro	2nd-EAH	1st-EAH	Korean	Chinese
Variable	($n = 103$)	($n = 93$)	($n = 187$)	($n = 189$)	($n = 120$)
Independent self-construal	4.80_a	$4.61_{a,b}$	4.57_b	4.29_c	$4.77_{a,b}$
	(0.69)	(0.65)	(0.71)	(0.65)	(0.61)
Interdependent self-construal	4.57_a	$4.87_{b,c}$	$5.00_{c,d}$	4.81_b	5.15_d
	(0.72)	(0.66)	(0.59)	(0.59)	(0.61)
Heritage acculturation	61.75_a	64.56_a	68.26_b	--	--
	(14.63)	(12.57)	(10.54)		
Mainstream acculturation	71.28_a	66.82_b	59.91_c	--	--
	(10.87)	(11.34)	(11.96)		
Personal norm	53.86_a	53.08_a	55.95_b	$55.01_{a,b}$	60.36_c
	(7.21)	(7.87)	(8.72)	(7.49)	(5.66)
Cultural norm	46.59_c	38.46_a	36.21_a	38.14_a	43.43_b
	(8.44)	(6.84)	(8.74)	(7.50)	(7.02)
Social self-efficacy					
Initiation	$3.28_{a,b}$	3.03_a	3.11_a	$3.21_{a,b}$	3.32_b
	(0.86)	(0.67)	(0.77)	(0.68)	(0.52)
Negative assertion	3.03_a	3.08_a	2.87_a	2.93_a	3.05_a
	(0.76)	(0.72)	(0.73)	(0.67)	(0.58)

Table 7 (continued)

Means and Standard Deviations for Measures of Cultural Values, Social Contextual Variables,

and Distress Measures by Cultural Group

	Cultural Group				
	Euro	2nd-EAH	1st-EAH	Korean	Chinese
Variable	($n = 103$)	($n = 93$)	($n = 187$)	($n = 189$)	($n = 120$)
Disclosure	3.23_a	$3.10_{a,b}$	$3.05_{a,b}$	2.92_b	3.24_a
	(0.63)	(0.60)	(0.71)	(0.67)	(0.53)
Social comparison	67.74_a	65.95_a	64.36_a	76.68_b	75.56_b
	(13.84)	(13.71)	(14.65)	(12.96)	(12.48)
Submissive behaviour	25.21_a	27.63_a	27.16_a	25.94_a	27.00_a
	(7.09)	(8.05)	(7.78)	(7.69)	(6.75)
Social anxiety (SPAI)	$76.20_{a,b}$	91.12_c	$84.71_{b,c}$	$76.56_{a,b}$	72.71_a
	(29.78)	(30.45)	(26.04)	(31.30)	(26.03)
Social anxiety (SADS)	8.84_a	$10.94_{a,b}$	$10.35_{a,b}$	12.25_b	9.62_a
	(8.03)	(7.21)	(6.97)	(6.46)	(6.49)
Depression	$14.59_{a,b}$	17.32_a	17.07_a	$14.59_{a,b}$	12.06_b
	(9.22)	(10.36)	(8.91)	(8.72)	(8.74)

Note. Standard deviations in parentheses. Euro = European-heritage; 2nd-EAH = 2nd-generation

East Asian-heritage; 1st-EAH = 1st-generation East Asian-heritage; SPAI = Social Phobia and

Anxiety Inventory; SADS = Social Avoidance and Distress Scale. Means with different

subscripts differ significantly at $p < .05$ based on the Games-Howell procedure.

Table 8

Planned Contrast Weights for Testing Focused Hypotheses

	Cultural Group			
	Euro	2nd-EAH	1st-EAH	Overseas EA
Hypothesis	($n = 103$)	($n = 93$)	($n = 187$)	($n = 309$)
SCS subscales				
Linear contrast	-3	-1	1	3
Quadratic contrast	1	-1	-1	1
Cubic contrast	-1	3	-3	1
Asian Socialization				
Linear contrast	-3	-1	1	3
Quadratic contrast	1	-1	-1	1
Cubic contrast	-1	3	-3	1
Cultural Discrepancy	1	-1	-1	1

Note. Euro = European-heritage; 2nd-EAH = 2nd-generation East Asian-heritage; 1st-EAH = 1st-generation East Asian-heritage; Overseas EA = Overseas East Asians; SCS = Singelis Self-Construal Scale.

Table 9

Means and Standard Deviations for the Social Experiences Scale by Cultural Group

Cultural Group	n	Mean	SD
European-heritage	103	80.95	29.39
2nd generation EAH			
Asian prime	45	81.49	28.70
North American prime	48	79.60	33.09
1st generation EAH			
Asian prime	96	77.28	28.22
North American prime	91	81.35	29.65
Korean	189	83.74	23.62
Chinese	120	88.31	25.94

Note. EAH = East Asian-heritage.

Table 10

Mediation Effects of Social Anxiety on the Relationships between Cultural Group (Unicultural vs. Bicultural) and Initiation Social Self-Efficacy, Social Comparison, and Submissiveness

Regression Paths	b	se	t	p
Mediation path a_1	11.49	2.23	5.16	<.0001
(Cultural group → social anxiety)				
Mediation path b_1	-0.02	0.001	-19.77	<.0001
(Social anxiety → initiation SSE)				
Total effect c	-0.18	0.06	-3.20	.001
Direct effect c'	-0.01	0.05	-0.12	.90
Mediation path a_1	11.49	2.23	5.16	<.0001
(Cultural group → social anxiety)				
Mediation path b_1	-0.20	0.02	-11.67	<.0001
(Social anxiety → social comparison)				
Total effect c	-9.23	1.07	-8.59	<.0001
Direct effect c'	-6.98	1.00	-6.97	<.0001
Mediation path a_1	11.49	2.23	5.16	<.0001
(Cultural group → social anxiety)				
Mediation path b_1	0.02	0.01	21.25	<.0001
(Social anxiety → submissiveness)				
Total effect c	1.25	0.58	2.15	.03
Direct effect c'	-0.64	0.46	-1.38	.17

Note. SSE = social self-efficacy

Table 11

Summary of Hierarchical Regression Analysis Predicting the Social Phobia and Anxiety

Inventory for Bicultural East Asian-heritage Individuals ($N = 280$)

Variable	β	Increment R^2	F change	p
		Initial model		
Step 1		.16	26.92	< .0001
SCS Independence	-0.40***			
SCS Interdependence	0.18**			
Step 2		.02	2.75	.07
VIA Heritage	-0.01			
VIA Mainstream	-0.13*			
		Alternative model		
Step 1		.16	26.92	< .0001
SCS Independence	-0.40***			
SCS Interdependence	0.18**			
Step 2		.02	5.48	.02
VIA Mainstream	-0.13*			

Note. SCS = Self-Construal Scale; VIA = Vancouver Index of Acculturation.

*p < .05. **p < .005. ***p < .0001.

Table 12

Summary of Forced Entry Regression Analysis Predicting the Social Phobia and Anxiety

Inventory for First- and Second-generation East Asian-heritage Individuals

Variable	β	Increment R^2	F change	p
First-generation East Asian-heritage ($N = 187$)				
		.52	66.80	$< .0001$
Initiation social self-efficacy	-0.31***			
Social comparison	-0.10			
Submissive behaviour	0.48***			
Second-generation East Asian-heritage ($N = 93$)				
		.53	33.82	$< .0001$
Initiation social self-efficacy	-0.26**			
Social comparison	-0.20*			
Submissive behaviour	0.43***			

Note. SCS = Self-Construal Scale; VIA = Vancouver Index of Acculturation.
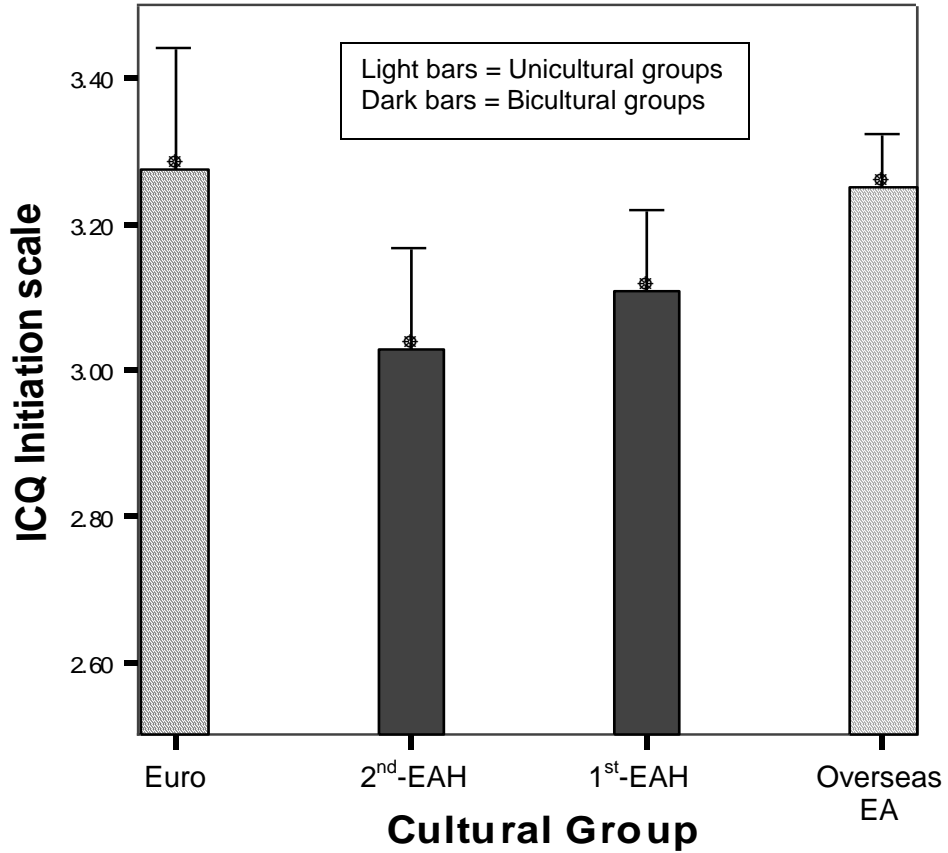
*$p < .05$. **$p < .005$. ***$p < .0001$.

Figure 1. Means and 95% confidence intervals for initiation social
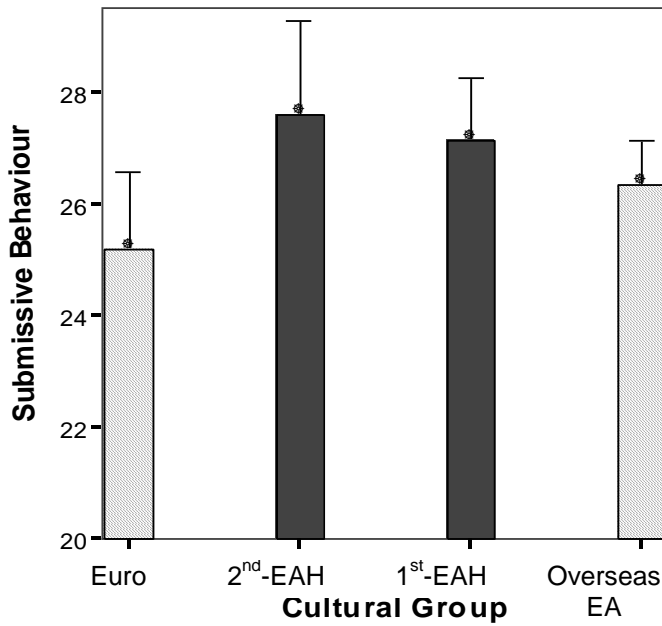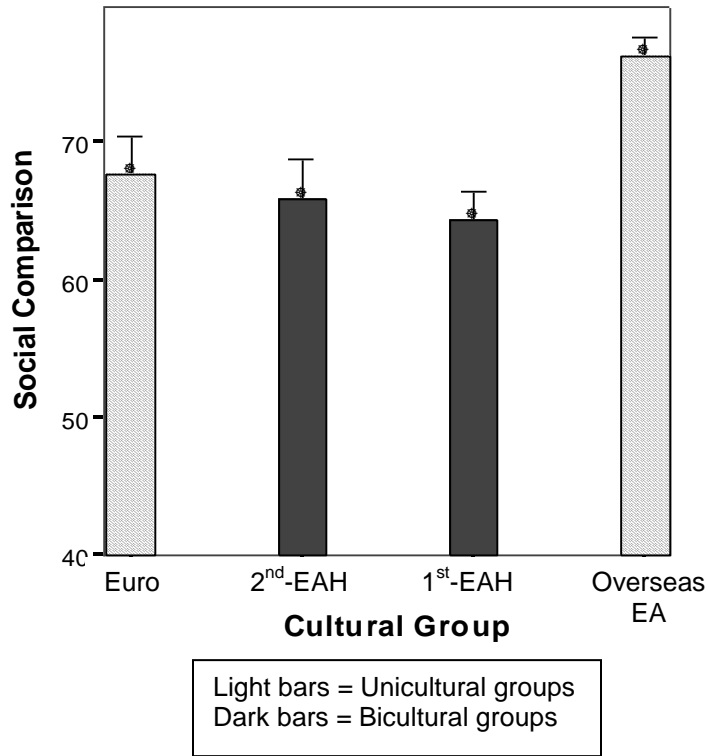
self-efficacy by cultural group.

Figure 2. Means and 95% confidence intervals for perceived social status

variables by cultural group.
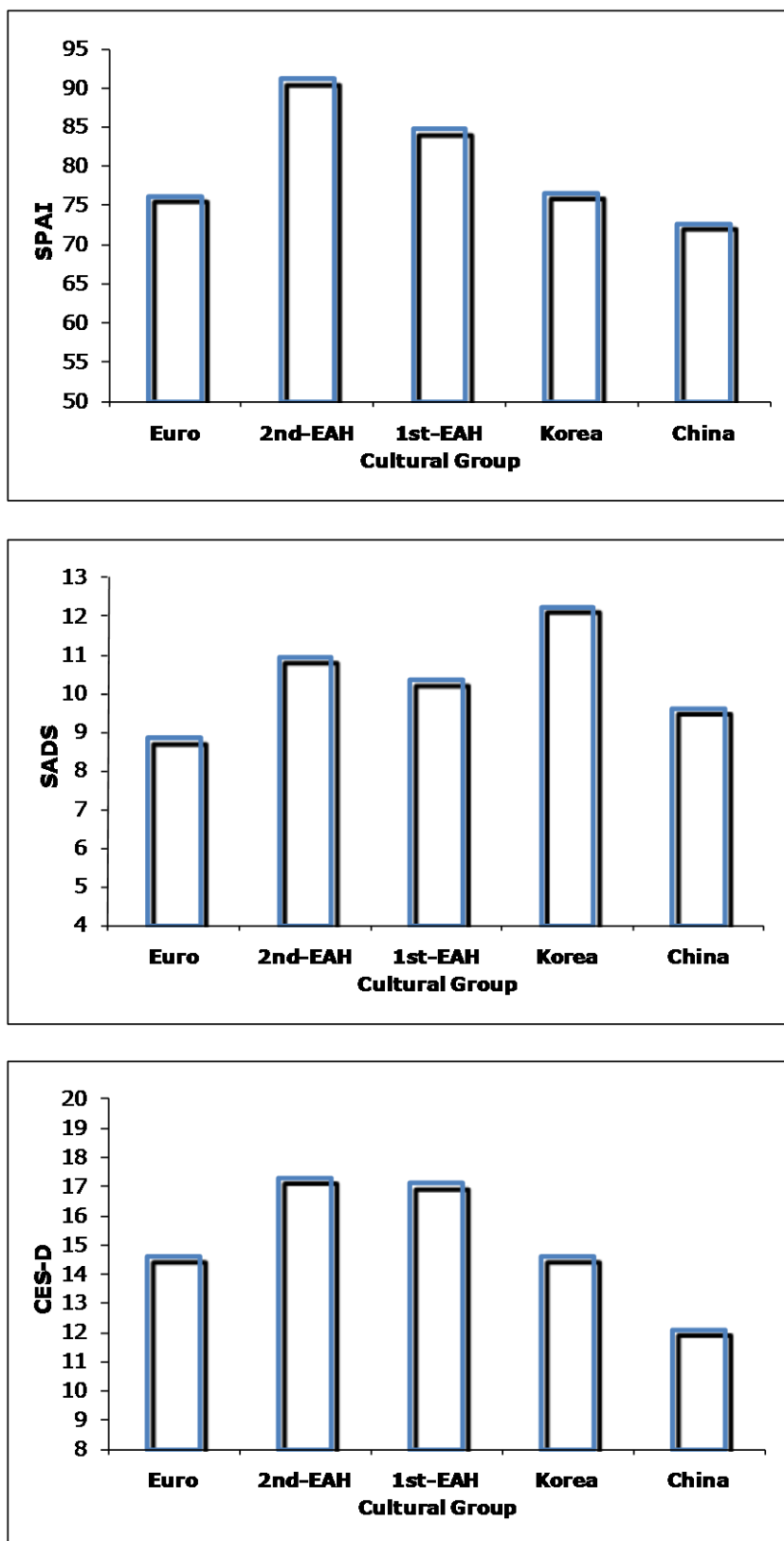
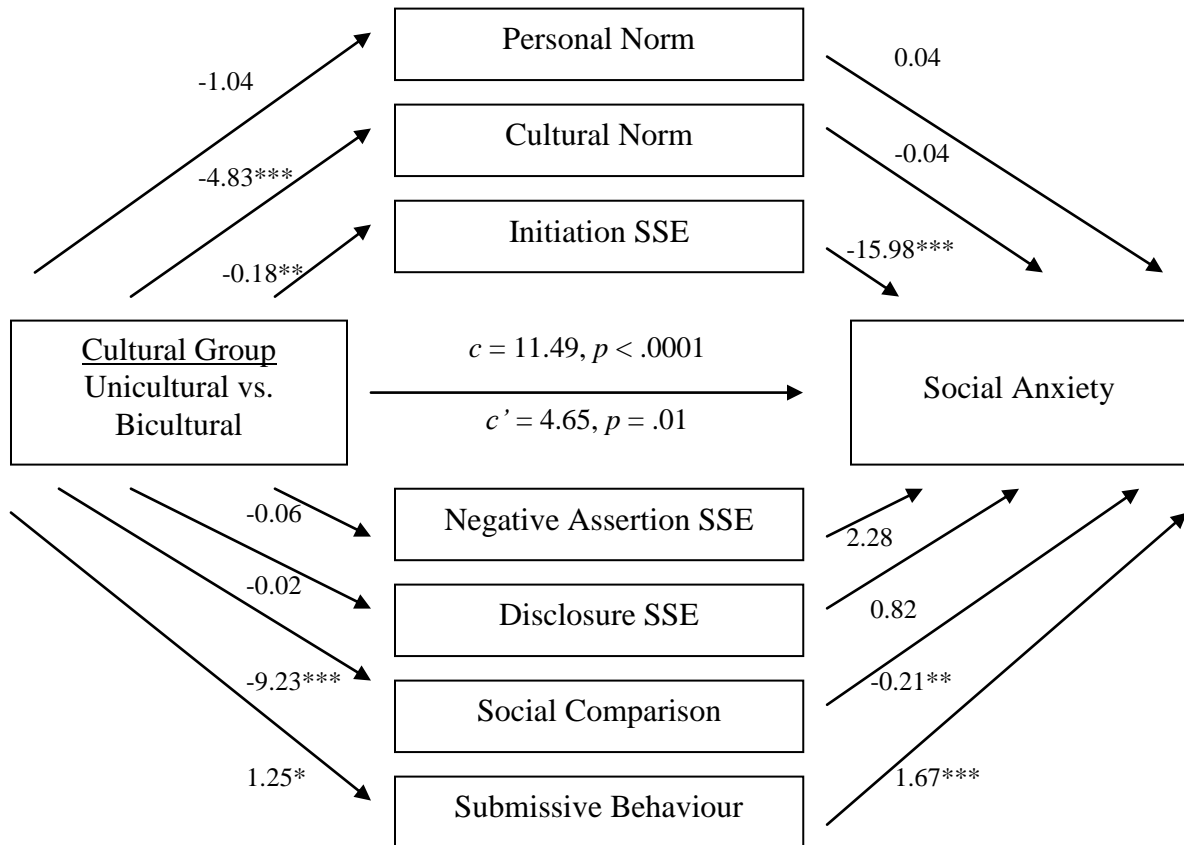*Figure 3.* Means for measures of distress by cultural group.

Figure 4. Multiple mediator estimated paths for social anxiety as measured by the SPAI.

p < .05. ** *p* < .005. ***p* < .0001.

Note. SSE = social self-efficacy.

Endnotes

[1]All major analyses were run both with and without these multivariate outliers. As the results showed the same pattern of significance, these participants were not removed from the dataset.

[2]Given the unequal sample sizes across groups, Welch's F test was used throughout this study to account for potential differences in variance.

[3]When gender and age were included as covariates, overall F-tests showed the same pattern of significance for the main effect of cultural group on the dependent variables: Personal Norm Scale, $F(4, 691) = 20.83$, $p < .0001$, partial $\eta^2 = .11$; Cultural Norm Scale, $F(4, 691) = 38.15$, $p < .0001$, partial $\eta^2 = .18$; the three subscales of the ICQ measuring social self-efficacy, $F(12, 1807) = 3.93$ $p < .0001$, partial $\eta^2 = .02$; perceived social status variables measured by the SCRS and SBS, $F(8, 1368) = 13.40$, $p < .0001$, partial $\eta^2 = .07$; the SPAI and SADS measuring social anxiety, $F(8, 1368) = 9.10$, $p < .0001$, partial $\eta^2 = .05$; and the CES-D measure of depression, $F(4, 691) = 6.98$, $p < .0001$, partial $\eta^2 = .04$.

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Appendix A

Social Experiences Scale

The following page describes people in various social settings, followed by a list of different feelings or experiences the people might have while in these settings. Using the scale provided at the top of the following page, please circle a number to the right of each item that best describes **what you would think of the person if he/she were to have that particular feeling or experience**. When responding to the items, please imagine the person as being of similar ethnicity to your own, and that the person is in a setting that he/she is familiar with (e.g., language is not a problem for the person). Also, please think about these scenes as taking place in a **Canadian social setting**.

To answer the following questions, please use the scale below to indicate what you would think of the person if he/she were to have the following feelings or experiences in a <u>Canadian social setting</u>.

0 ----------------------- 1 ---------------------- 2 ---------------------- 3 ----------------------- 4

**There's nothing wrong
with what he/she is feeling/
experiencing; it seems
normal to me**

**There's a problem with
what he/she is feeling/
experiencing; it seems
strange to me**

A) *A man is attending a friend's wedding where there are about 150 guests.*

What would you think of this man if…

1. …he had difficulty making eye contact with others?	0	1	2	3	4
2. …he became tense when having to talk about himself or his feelings?	0	1	2	3	4
3. …he avoided interacting with other people?	0	1	2	3	4
4. …he had difficulty stating his opinion to others?	0	1	2	3	4
5. …he felt uncomfortable meeting people?	0	1	2	3	4
6. …he had difficulty disagreeing with another's point of view?	0	1	2	3	4
7. …he had difficulty talking to an attractive person of the opposite sex?	0	1	2	3	4
8. …he avoided talking to people unless he knew them well?	0	1	2	3	4
9. …he felt tense mixing in a group?	0	1	2	3	4
10. …he had difficulty starting conversations with strangers?	0	1	2	3	4

B) *A woman is at an evening work holiday party.*

What would you think of this woman if…

1. …she had difficulty making eye contact with others?	0	1	2	3	4
2. …she became tense when having to talk about herself or her feelings?	0	1	2	3	4
3. …she avoided interacting with other people?	0	1	2	3	4
4. …she had difficulty stating her opinion to others?	0	1	2	3	4
5. …she felt uncomfortable meeting people?	0	1	2	3	4
6. …she had difficulty disagreeing with another's point of view?	0	1	2	3	4
7. …she had difficulty talking to an attractive person of the opposite sex?	0	1	2	3	4
8. …she avoided talking to people unless she knew them well?	0	1	2	3	4
9. …she felt tense mixing in a group?	0	1	2	3	4
10. …she had difficulty starting conversations with strangers?	0	1	2	3	4

0 ---------------------- 1 --------------------- 2 --------------------- 3 --------------------- 4

There's nothing wrong with what he/she is feeling/ experiencing; it seems normal to me

There's a problem with what he/she is feeling/ experiencing; it seems strange to me

C) *A woman is attending a friend's birthday party that is being held at a restaurant.*

What would you think of this woman if…

1. …she had difficulty making eye contact with others?	0	1	2	3	4
2. …she became tense when having to talk about herself or her feelings?	0	1	2	3	4
3. …she avoided interacting with other people?	0	1	2	3	4
4. …she had difficulty stating her opinion to others?	0	1	2	3	4
5. …she felt uncomfortable meeting people?	0	1	2	3	4
6. …she had difficulty disagreeing with another's point of view?	0	1	2	3	4
7. …she had difficulty talking to an attractive person of the opposite sex?	0	1	2	3	4
8. …she avoided talking to people unless she knew them well?	0	1	2	3	4
9. …she felt tense mixing in a group?	0	1	2	3	4
10. …she had difficulty starting conversations with strangers?	0	1	2	3	4

D) *A man is having lunch with co-workers at his new job.*

What would you think of this man if…

1. …he had difficulty making eye contact with others?	0	1	2	3	4
2. …he became tense when having to talk about himself or his feelings?	0	1	2	3	4
3. …he avoided interacting with other people?	0	1	2	3	4
4. …he had difficulty stating his opinion to others?	0	1	2	3	4
5. …he felt uncomfortable meeting people?	0	1	2	3	4
6. …he had difficulty disagreeing with another's point of view?	0	1	2	3	4
7. …he had difficulty talking to an attractive person of the opposite sex?	0	1	2	3	4
8. …he avoided talking to people unless he knew them well?	0	1	2	3	4
9. …he felt tense mixing in a group?	0	1	2	3	4
10. …he had difficulty starting conversations with strangers?	0	1	2	3	4

Appendix B

UBC Research Ethics Board Certificate of Approval

The University of British Columbia
Office of Research Services
Behavioural Research Ethics Board
Suite 102, 6190 Agronomy Road,
Vancouver, B.C. V6T 1Z3

CERTIFICATE OF APPROVAL - MINIMAL RISK AMENDMENT

PRINCIPAL INVESTIGATOR:	DEPARTMENT:	UBC BREB NUMBER:
Sheila R. Woody	UBC/Arts/Psychology, Department of	H07-00604

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:	
Institution	**Site**
UBC	Vancouver (excludes UBC Hospital)
Other locations where the research will be conducted:	
In addition to Dr. Woody's UBC laboratory (Kenny Building, Vancouver campus), research will also be conducted in classrooms at Seoul National University under the supervision of a primary faculty member, Dr. Hoon-Jin Lee.	

CO-INVESTIGATOR(S):
Lorena Hsu

SPONSORING AGENCIES:
Social Sciences and Humanities Research Council of Canada (SSHRC)

PROJECT TITLE:
Cultural Interpretations of Social Behaviour

Expiry Date - Approval of an amendment does not change the expiry date on the current UBC BREB approval of this study. An application for renewal is required on or before: May 25, 2008

AMENDMENT(S):	AMENDMENT APPROVAL DATE: November 20, 2007	
Document Name	**Version**	**Date**
Protocol:		
Research Proposal	3	October 18, 2007
Advertisements:		
Main study poster	3	November 9, 2007

The amendment(s) and the document(s) listed above have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval is issued on behalf of the Behavioural Research Ethics Board
and signed electronically by one of the following:

Dr. M. Judith Lynam, Chair
Dr. Jim Rupert, Associate Chair
Dr. Laurie Ford, Associate Chair